

Dr.M.H.M.G.N.H.Library

633.71 BEN



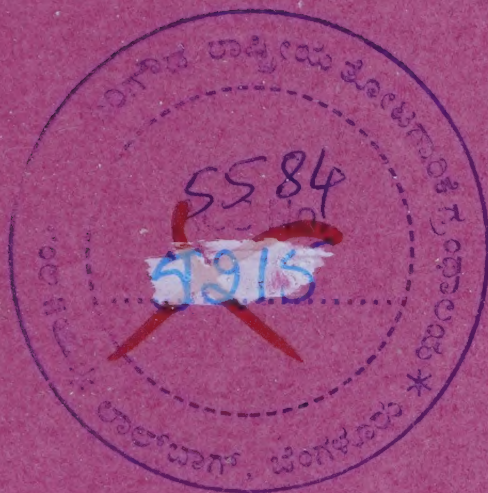
5584

5584

633.71 BEN



ಗ್ರಂಥಾಲಯ  
ಲಾಲ್ ಬಾಗ್, ಬೆಂಗಳೂರು





238

TL

1

~~87~~  
~~88~~

~~87~~  
~~88~~

GOVT BOTANIC GARDENS  
SINGAPORE  
LIBRARY  
No. 61

P

61

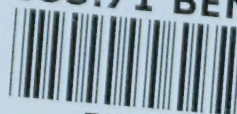


THE

ACC NO -

Dr.M.H.M.G.N.H.Library

633.71 BEN



5584

584

# CULTIVATION AND CURING OF TOBACCO

IN

## BENGAL.



Government of Karnataka

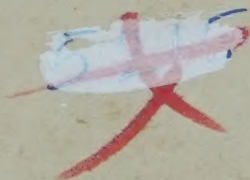
**Dr. M. H. Marigowda National Horticulture Library**

Directorate Of Horticulture Lalbagh,  
Bangalore - 560 004

5584

ACC. No. \_\_\_\_\_

CALL No. 633.71 BEN

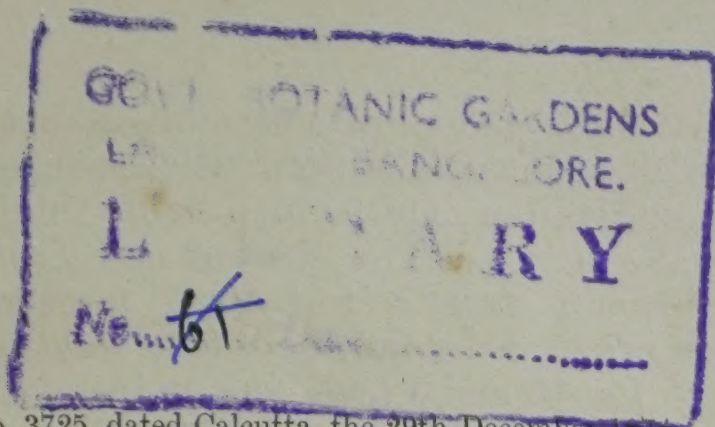


Calcutta:

PRINTED AT THE BENGAL SECRETARIAT PRESS.

1874.

633.71  
BEN



No. 3725, dated Calcutta, the 29th December 1874.

From—The Asst. Secretary to the Government of Bengal,

To—The Secretary to the Government of India, Department of Revenue, Agriculture, and Commerce.

I AM directed to acknowledge receipt of your No. 3-119 of 28th March 1873, calling for certain information therein required concerning the growth and manufacture of tobacco in the districts of Bengal; and in forwarding the accompanying volume of reports, Part I, on the subject, I am to express the regret of His Honor the Lieutenant-Governor at the delay that has occurred in its submission, which delay has, however, been for the most part unavoidable.

2. I am also to take this opportunity of laying before His Excellency the Governor-General in Council the opinions that have been expressed by the District Officers of Bengal on the suggestion in para. 3 of the Resolution of the Government of India, No. 683 of 26th December 1873, as to improve the growth and curing of the leaf by the importation of skilled growers and curers from Manilla or elsewhere. The opinions in question will be found recorded in Part II of the volume now submitted, and an abstract of them in appendix attached to this letter.

3. To shew the actual present state of the cultivation of tobacco in Bengal at a glance, a synoptical statement of the contents of Part I is also appended [Statement A], the data in which being verified by continuous reference to the districts, supplemented, as far as possible, where information is wanting in the original reports.

4. From the papers now submitted, it would appear that tobacco is grown more or less extensively in every district of Bengal, with the exceptions of Gya and Noakhally only. The returns shew a total area of about 2,00,000 acres under the plant, but the yield is so variously stated that the Lieutenant-Governor hesitates to make any estimate of the average return. A careful inspection of the reports seems to indicate,

however, that while under ordinary cultivation the yield varies from two or three maunds to six or seven per acre, the return under high cultivation may be almost anything—from 10 to 30 or even 40 maunds. The cost of cultivation varies proportionately, and is stated at from Rs.  $4\frac{1}{2}$  per acre up to Rs. 10. The market price varies in the same way from Rs. 2 per maund up to Rs. 10 and 12, and in one instance (Chittagong) is stated to be as high as Rs. 22. The delay in submitting the present reports has been largely occasioned by the attempt to verify and reconcile their data; and His Honor fears that a considerable time must elapse before it will be in his power to lay a final and satisfactory report on the subject before the Government of India. He gathers, however, generally from the returns now submitted that we may roughly estimate the gross annual value of the tobacco harvest of Bengal at about Rs. 1,00,00,000 a year, or the sum of £1,000,000 sterling.

5. The total value of the product exported meanwhile from Bengal, according to the Custom House returns of last years, is stated to have been as follows:—

				Value.	
				Rs.	Cwt.
1871-72	...	...	...	11,72,154	94,769
1872-73	...	...	...	14,10,648	1,83,375
1873-74	...	...	...	22,96,045	2,60,349
January to October 1874 (10 months)	...	...	...	18,00,000	.....

There is reason, the Lieutenant-Governor thinks, for suspecting that the value is considerably understated in the figures. Thus, the average value for the year 1871-72 will be seen, was Rs. 12 per hundred-weight, while for the year 1872-73, it was but Rs. 7, and for 1873-74, Rs. 9. It is reasonable to believe that it is the finest leaf tobacco exported, it is doubtful, His Honor thinks, whether the returns represent the true value of the export. The shipment of tobacco to Europe from Bengal is almost a new trade, and indications are certainly not wanting that it admits of definite expansion. It has long been well-known that the leaf of which Burmah cheroots are made is commonly the product of Rungpore, which is reported, in the returns on the submission, to have 60,000 acres of land under the crop, giving an average yield of nine maunds per acre, of the value of from Rs. 6 to Rs. 12 per maund.

6. The chief producing districts, according to the reports now submitted, are the following :—

	Acres.	Declared value of export. Rs.
Rungpore ...	60,000	16,05,000
Tirhoot ...	40,000	not stated.
Cooch Behar ...	24,000	12,93,750
Dinagepore ...	20,000	1,20,000
Purneah ...	15,000 to 20,000	3,00,000
Monghyr ...	10,000	1,30,000
Nuddea ...	8,000 to 9,000	2,50,000

In instancing these figures from the appended statement (A), it is necessary to remark that they must be received with considerable reserve from the inconsistencies which they disclose upon the most cursory study, and that can only be cleared up by the patient and persistent enquiries that are being made through the district executive.

7. Casual experiments have been made for some years past in the province, for improving the produce by the substitution of exotic for indigenous seed. A small quantity of Havannah and Virginian seed, for experimental cultivation, was received by this Government from the Commissioner of Cotton and Commerce in June 1871, and distributed widely over the province. The quantity was very small, but numerous experiments were made with the seed, and with encouraging results in one or two districts. The districts in which the experiments were more or less successful were the 24-Pergunnahs, Jessore, Sonthal Pergunnahs, and Manbhoom.

(a.) 24-Pergunnahs.—The Superintendent of the Baraset farm reports of his experiment with Havannah seed, in the last season, that the produce was three times as large as from Hinglee seed, the best native description known in the district; while the cost of cultivation was the same. The yield, moreover, was nine maunds per beegha instead of three. “In comparison with the Indian varieties, I find “none of them equal to Havannah tobacco: its gigantic “growth, remunerative crop, and sweet aromatic taste, are “far superior to any one of them.”

(b.) In the *Nuddea district*, experiments have been twice tried of late years with Virginia tobacco: in 1869-70 and in

1871-72. On the former occasion, the seed appears to have been bad ; while in the last it was not received early enough, and the seed did not germinate. In Kooshtea, the plants grew to a height of three inches, and then died. At Ranaghat, however, a few plants were successfully raised ; the leaves were broader than those of indigenous tobacco, and the produce was reported to possess great stimulant power.

(c.) Samples of acclimatized Virginia leaf, grown in the district of *Jessore*, were submitted to the Agricultural and Horticultural Society of India in 1873 for report. The gentlemen to whom the samples were referred pronounced the leaf to be excellent, and the curing alone defective. The leaves had, in fact, been dried, not cured. “ One side of “ the leaves has attained the proper colour, but the other “ side is of a darker tint, shewing that the tobacco has not “ been properly exposed when drying. The tobacco might “ even now be cured, if the leaves were hung on strings, and “ allowed to imbibe moisture from the atmosphere, then “ packed, so as to sweat, when gradually they would be “ cured and become tobacco. At present the leaves are the “ same as the native *sooka*.”

(d.) One of the two experiments tried in the *Dacca* division proved partially successful, but the tobacco was declared to be “ very mild.” The tobacco produced in the Patna division was, in some cases, reported to be superior to, and to possess a stronger flavour than, the indigenous leaf. In *Bhagulpore*, the failure of the experiment was ascribed to inundations and the ravages of an insect called the “ gye.” In *Monghyr*, the seed germinated fairly, but the plants, when about 10 inches high, were destroyed by caterpillars. In *Purneah*, they were destroyed by the rains.

(e.) The *Sonthal Pergunnahs* would seem to be the only district in the *Bhagulpore* division where the experiments met with success. Mr. Blumhardt, reporting, says :—“ The plants which I have in my garden have grown “ remarkably strong and healthy, and the leaves are very large.”

(f.) In *Orissa*, there were no successful experiments. In *Chota Nagpore*, the experiments of Manbhoom were very successful. The leaf was declared to be of excellent quality, and far superior to the indigenous produce. The plants grew to be three feet in height and upwards, with large and thickly-set leaves, and the yield was not less than double

that of the indigenous plants. The tobacco was found stronger moreover, and more pungent than the common kind.

The cultivation of the Virginia species is spreading, it is asserted, in some parts of this district, and will, it is believed, in course of time supersede the common country tobacco.

8. As to the curing and preparation of the leaf, the reports shew that it is only in the Rajshahye and Rungpore districts, and those of Patna, Shahabad, Tirhoot, and Sarun, that any curing process whatever, properly so-called, is attempted by the cultivator. In every other district the leaf is simply dried in the hut, or in the shade, or in the sun. The special process adopted in the Rajshahye division and in Behar are described at pages 41, 42, and 76 of the accompanying volume.

9. Appendix C, which accompanies this letter, is a summary of the opinions of the district executive, expressed in the reports of Part II, concerning the proposal of His Excellency in Council to import skilled tobacco-growers and curers. Considerable diversity of opinion seems to exist as to the benefits likely to accrue from such a step. But after mature consideration of the subject, the measures which the Lieutenant-Governor would recommend for adoption in Bengal are a systematic course of experiments for improving both the growth and curing of the plant under State supervision in the districts of Rungpore and Tirhoot. In the former district it will be desirable to select land for the purpose in one or other of the pergunnahs where the best varieties are now produced. If tobacco of fine quality can be grown anywhere in Bengal, it will probably be in this district and in Cooch Behar; and instead of desultory experiments under amateur supervision in a dozen different districts, the Lieutenant-Governor would place their conduct in professional hands, and concentrate our efforts upon a single farm or two.

10. With a view to this, the Lieutenant-Governor has already directed, in so far as Tirhoot is concerned, that the Poosah stud lands, south of the Gunduck, which the Government of India made over to this Government a year ago for purposes of experimental cultivation, shall primarily be devoted to this purpose. The tobacco of Tirhoot would not seem to be equal in quality to that of Rungpore, but the cultivation has laid firm hold of the district, and the large

area therein already devoted to its growth (40,000 acres mark it out as, after Rungpore, the most eligible field we can try. The farm has been placed in the charge of a Mr. J. Paterson, an indigo planter, who has had long practical acquaintance with native agriculture, and will make, as the Lieutenant-Governor believes, a valuable assistant to the superintendent whom it will perhaps be desirable to put in charge. In regard to these experiments, the Lieutenant-Governor desires that they should be as complete as possible. The soil must be analyzed at the outset to ascertain whether it is really adapted to the growth of tobacco of good quality. A competent resident superintendent must take the conduct of the experiments, with an assistant thoroughly versed in the modes and resources of native agriculture below him; such a man, in fact, as, it is hoped, we have already secured at Poosah in Mr. Paterson. The Lieutenant-Governor thinks it not improbable that men might be obtained in this country for the superintendence of these farms, and does not suppose that very high pay would be necessary to secure them; but as the work of *curing* the leaf lasts for a comparatively short time only, it might be desirable to give the charge of each farm to a skilled grower as well as curer of the weed. The two qualifications will not improbably go together; and instead of a superintendent and curer for each farm, we might probably secure both in one man from abroad.

11. If therefore His Excellency in Council should determine to import men of this class into the country, the Lieutenant-Governor will be glad to have at least two skilled growers and curers appointed to Bengal.

---

## APPENDICES.

# APPEN

## TOBACCO IN

DIVISIONS.	Districts.	Average area under cultivation in acres, last 5 years.	Grown on high land or low.	Normal rainfall.	One crop or two.	Cost of cultivation per acre.		Yield per acre.	
		Acres.				Rs. A.P.	Rs. A.P.	M. S.	M. S.
BURDWAN.	Burdwan ...	1,000	Alluvial ...	59'11	High two. lands;	0 0 0	15 0 0	10 0 to 12 0	
	Bankoora ...	1,000	Ditto ...	52'57	Two ...	12 0 0 to 18 0 0		9 0	0 0
	Beerbhoom ...	50	High, alluvial	51'54	One ...	26 4 0	0 0 0	9 0 to 10 0	
	Midnapore ...	1,000	Alluvial ...	62'28	Two ...	23 15 0	0 0 0	15 0	0 0
	Hooghly ...	200	High clay and sand.	69'02	One crop, but 2 cuttings : sometimes 3.	42 0 0	0 0 0	30 0 to 40 0	
	Howrah ...	50 to 60	High, alluvial	66'22	Two ...	15 0 0	0 0 0	15 0	0 0
PRESIDENCY.	24-Pergunnahs ...	.....	High, alluvial	67'2	Two ...	59 4 0	0 0 0	4 20	0 0
	Nuddea ...	8,000 to 9,000	High, dry land	56'93	„ ...	21 0 0	62 0 0	9 0	0 0
	Jessore ...	1,500	Ditto ...	66'41	One ...	0 0 0	28 0 0	13 20	0 0
RAJSHAHYE.	Moorshedabad ...	10,500 (beeghas.)	High, alluvial	45'99	Two ...	21 5 10 to 24 9 3		12 0 to 15 0	
	Dinapore ...	20,000	Damp, alluvial; not too low.	84'59	One ...	25 0 0 to 50 0 0		12 0 to 30	
	Maldah ...	1,240	Loamy soil ...	53'88	Two or more ...	4 8 0 to 6 0 0		3 30 to 6 0	
	Rajshahye ...	4,000	High, alluvial	81'71	One ...	†28 0 0	0 0 0	12 0 to 14 0	
	Rungpore ...	60,000	High clay and sand.	88'19	.....	26 0 0	0 0 0	9 0	0 0
	Bogra ...	2,846	Middling* ...	88'41	Two occasionally	17 8 0	0 0 0	6 10	0 0
	Pubna ...	6,558	High ...	66'89	Two ...	15 0 0 to 45 0 0		12 0 to 30 0	
COOCH BEHAR.	Darjeeling, annually	24	High ...	124'95	One ...	11 0 0 to 15 0 0		4 0 to 6 0	
	Julpigoree ...	.....	High, loamy ...	100 to 120 (inches.)	„ ...	25 0 0 to 50 0 0		10 0 to 30 0	
	Cooch Behar ...	24,000	High land ...	116'30	„ ...	33 0 0	0 0 0	15 0	0 0
DACCA.	Dacca ...	.....	Ditto ...	74'43	„ ...	13 6 0 to 13 8 0		6 0 to 7 0	
	Fureedpore ...	800	Ditto ...	75'83	„ ...	25 0 0 to 30 0 0		24 0	0 0
	Backergunge ...	100	Ditto ...	76'50	„ ...	15 0 0	0 0 0	7 0 to 8 0	
	Mymensingh ...	5,000	Ditto ...	103'05	„ ...	10 0 0 to 14 0 0		5 0	0 0
	Chittagong ...	2,500	High, alluvial land.	105'79	One ...	30 0 0	0 0 0	12 0 to 15 0	
CHITTAGONG.	Noakholly ...	.....	.....	101'70	Tobacco not grown in this district.				
	Tipperah ...	700	High land ...	93'50	„ ...	16 8 0	0 0 0	8 0	0 0
	Chittagong Hill Tracts,	177	Alluvial ...	90'9	„ ...	8 0 0	0 0 0	490 (seers.)	
	Hill Tipperah ...	.....	.....	40'15	.....	.....		.....	

\* Neither too high nor too low.

† Including rent, Rs. 7-8.

## DIX A.

BENGAL, 1873-74.

How cured.	Market price per maund.		Exported or for home use.	Annual export.	Value of Annual export.	How used by the people.	What experiments tried.
	Rs. A. P.	Rs. A. P.		Mds.	Rs.		
Dried in the sun.	2 0 0	to 4 0 0	Exported...	6,000	24,000	.....	Virginia; failure.
Ditto, and for home use.	2 0 0	to 4 0 0	Ditto ...	4,000	12,000	Smoked ...	None.
Special mode ...	3 0 0	to 3 8 0	Home use	.....	.....	Ditto ...	
Dried in the sun	2 8 0	to 5 0 0	Ditto ...	.....	.....	Smoked and chewed.	Virginia; success.
Dried in the shed.	5 0 0	0 0 0	§	A few maunds.	1,000	Ditto ...	Virginia; partial success.
Simply dried ...	5 0 0	to 6 0 0	For home use & for sale.	None	Nil.	Smoked ...	No experiment made in this district.
Dried in the sun.	8 0 0	0 0 0	Exported...	26,000	2,08,000	Smoked ...	Virginia; failure.
Ditto ...	2 8 0	to 3 0 0	Ditto ...	30,000	2,00,000 to 2,50,000	Smoking and preparing snuff.	Virginia; partial success.
Ditto ...	3 8 0	to 6 8 0	Home use	None	None	.....	Virginia; success.
†	2 8 0	to 6 0 0	Ditto ...	None	None	Smoked ...	None.
Ditto ...	3 12 0	to 4 0 0	Exported & home use.	30,000	60,000 to 1,20,000	Ditto.	
Dried in the hut.	2 0 0	to 5 0 0	Home use	Nil.	Nil.	Ditto.	
Special mode...	2 12 0	0 0 0	Ditto ...	Nil.	Nil.	Smoked and chewed.	None.
Ditto ...	6 0 0	to 12 0 0	Exported...	3,41,400	16,05,600	.....	
Dried in the sun.	2 8 0	to 3 12 0	Home use	.....	.....	.....	
Ditto ...	1 4 0	to 3 8 0	Ditto ...	.....	.....	Smoked ...	None.
Ditto ...	5 0 0	to 7 0 0	Ditto ...	Nil.	Nil.	.....	None.
Dried in the hut.	3 0 0	to 8 0 0	Exported...	30,000	1,80,000	Smoked and chewed.	Virginia; success not marked.
Ditto and in the sun.	4 8 0	0 0 0	Ditto & for home use.	2,87,500	12,93,750	Ditto ...	
Dried in the hut.	5 0 0	to 7 0 0	Home use	... ..	.....	.....	Virginia; failure.
Ditto ...	4 8 0	to 8 0 0	Ditto ...	None	Nil.	Smoked ...	Virginia; partial success.
Ditto ...	.....		Ditto ...	.....	.....	.....	Virginia; failure.
Ditto ...	5 0 0	to 6 0 0	Ditto ...	None	.....	.....	Virginia; failure.
Dried in the sun	5 0 0	to 8 0 0	Home use...	.....	.....	Smoked and chewed.	Virginia; partial success.
Ditto ...	5 0 0	0 0 0	Ditto ...	.....	.....	Ditto ...	Nil.
Dried in the hut	15 0 0	to 22 0 0	Exported & for home use.	1,900	4,000	Smoked and chewed.	Virginia; failure.
.....	.....		.....	.....	.....	.....	.....

† Exposed to the dew at night, and to the sun in the day, for a few days.

§ Partly exported, and partly used for home consumption.

DIVISIONS.	Districts.	Average area under cultivation in acres, last 5 years.	Grown on high land or low.	Normal Rainfall.	One crop or two.	Cost of cultivation per acre.		Yield per acre.	
		Acres.				Rs. A. P.	Rs. A. P.	M. S.	M. S.
PATNA.	Patna ... ..	400	High, alluvial...	37·61	Three†	20 10 0	0 0 0	3 0 to 6 0	
	Gya ... ..	.....	.....	43·02	Tobacco not grown in this district.				
	Shahabad ... ..	250	High, alluvial...	48·93	One ... ..	20 0 0	0 0 0	10 0	0 0
	Tirhoot ... ..	40,765	Ditto ..	44·47	„ ... ..	34 14 0	0 0 0	14 0	0 0
	Sarun ... ..	500	Ditto ...	37·87	„ ... ..	6 0 0 to 7 0 0		10 0 to 12 0	
	Chumparun ... ..	130	Ditto ...	45·69	Two ... ..	20 0 0 to 25 0 0		6 0 to 12 0	
BHAGULPORE.	Monghyr ... ..	10,000	High land ...	40·04	Reasonably two	18 12 0	0 0 0	10 0	0 0
	Bhagulpore ... ..	1,000	Ditto ...	48·63	Two ... ..	28 11 0	0 0 0	2 0 to 25 0	
	Purneah ... ..	15,000 to 20,000	Ditto ...	66·92	One crop ...	13 0 0	0 0 0	10 0 to 15 0	
	Sonthal Pergunnahs	No data	Ditto ...	46·80	Two ... ..	26 10 0	0 0 0	30 0	0 0
ORISSA.	Cuttack ... ..	7,800	Alluvial ...	44·55	One ... ..	19 8 0	0 0 0	20 0	0 0
	Pooree ... ..	300	Ditto ...	55·55	„ ... ..	18 0 0	0 0 0	7 0 to 20 0	
	Balasore ... ..	50	Ditto ...	67·30	„ ... ..	20 0 0	0 0 0	4 0	0 0
CHOTA NAGPORE.	Hazareebagh ... ..	Not known	High land ...	50·37	„ ... ..	7 0 0	0 0 0	5 0	0 0
	Lohardugga ... ..	300 to 450†	Alluvial ...	53·57	Two ... ..	29 0 0 to 49 0 0†		3 0 to 15 0	
	Singbhoom ... ..	200 to 300 (beeghas.)	High land ...	49·6	One ... ..	6 0 0 to 8 or 9 Rs.		2 3 to 10 0	
	Manbhoom ... ..	800 (beeghas.)	Ditto ...	44·64	Two ... ..	1 12 0	0 0 0	2 0 to 5 0	

\* Rs. 2-8 this year.

† Mr. Halder gives 2,000 acres.

‡ Mr. Halder gives Rs. 5-14 to 10-9 per acre.

## APPENDIX.

V

How cured.	Market price per maund.		Exported or for home use.	Annual export.	Value of annual export.	How used.	What experiments tried.
	Rs. A. P.	Rs. A. P.		Mds.	Rs.		
Special mode...	6 0 0	0 0 0	Exported...	\$3,000	30,000	.....	.....
				Manufactured 4,000, raw 2,400.			
Ditto ...	4 0 0	0 0 0	Home use...	Nil.	Nil.	Smoked and chewed.	.....
Ditto ...	4 0 0 to	5 0 0	.....	.....	.....	.....	Havannah and Virginia; with partial success.
Ditto ...	0 11 0	0 0 0	Home use...	.....	.....	.....	Ditto.
Ditto or dried in the sun.	2 0 0 to	6 0 0	Ditto ...	Nil.	Nil.	Smoked and chewed.	None
Dried in the sun	3 12 0 to	4 8 0	Exported...	20,000	£13,000	Ditto ...	.....
Ditto ...	2 0 0 to	10 0 0	Home use...	Nil.	Nil.	Ditto ...	Virginia; failure.
Ditto ...	5* 0 0	0 0 0	Exported...	60,000 to 80,000	3,00,000	Ditto ...	Virginia and Havannah grow very well, but curing is not well understood.
Dried in the air and in the sun.	3 0 0	0 0 0	Home use...	Nil.	Nil.	Ditto ...	None.
Special mode ...	4 8 0	0 0 0	Ditto ...	Nil.	Nil.	Ditto ...	Success in pergunnah Kalamatea.
Ditto ...	3 4 0	7 2 0	Ditto ...	Nil.	Nil.	Ditto ...	Virginia; failure.
Dried in the sun	4 0 0 to	8 0 0	Ditto ...	.....	.....	Ditto ...	Ditto.
Ditto ...	5 0 0	0 0 0	Ditto ...	Not known	Not known	Ditto ...	.....
Dried in the sun and shade.	8 0 0 to	12 0 0	Home use ..	.....	.....	Smoked in sál leaf and chewed.	Manilla; marked success.
Dried in the shade.	5 0 0 to	8 0 0	Ditto ...	Nil.	Nil.	Ditto ...	None.
Dried in the sun	4 0 0 to	8 0 0	Ditto ...	Nil.	Nil.	Smoked ...	Virginia; marked success.

¶ Three crops mean three cuttings.

|| This includes Rs. 12 for rent per acre.

§ Of this a great portion is imported from Tirhoot.

APPEN  
TOBACCO IN  
Cost of Culti

DIVISIONS.	Districts.	Number of ploughings.	Cost of tillage.		Transplanting.		Manure.		Cost of seed.	
			Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
BURDWAN.	Burdwan ...	Repeated ploughings		5 0 0		1 0 0		1 8 0		1 0 0
	Bankoora ...	Ditto ditto ...		6 0 0		1 2 0		1 8 0		0 8 0
	Beerbhoom ...	2 ploughings ...		6 12 0		0 12 0		2 4 0		1 2 0
	Midnapore ...	Repeated ploughings		3 8 0		3 11 0		0 14 0		1 0 0
	Hooghly ...	3 to 4 ploughings...		7 8 0		6 0 0		2 0 0		0 12 0
	Howrah ...	4 ploughings ...		4 8 0		1 8 0		3 0 0		0 13 0
PRESIDENCY.	24-Pergunnahs	Repeated ploughings		10 8 0		3 0 0		9 0 0		0 12 0
	Nuddea ...	Ditto ditto ...		25 8 0		2 4 0		6 0 0	.....	
	Jessore ...	Ditto ditto ...		8 4 0		2 4 0		4 0 0		0 9 0
RAJSHAHYE.	Moorshedabad	4 to 6 ploughings...	6 3 10 to	7 15 1		1 8 2	2 4 3 to	3 0 5	0 12 1 to	1 8 2
	Dinagepore ...	A dozen times or more.		25 0 0		1 0 0		3 0 0		1 8 0
	Maldah ...	6 ploughs thrice ...		4 8 0		.....		*6 0 0		0 2 0
	Rajshahye ...	4 to 5 ploughings...		3 8 0		1 12 0		2 0 0		2 4 0
	Rungpore ...	2 ploughings ...		.....		.....		.....		.....
	Bogra ...	4 or 5 ditto ...		4 0 0 (per beegha.)		1 0 0 (per beegha.)		0 8 0 (per beegha.)		0 4 0 (per beegha.)
	Pubna ...	7 ditto ...		5 0 0		2 0 0		1 8 0		1 0 0
COOCH BEHAR.	Darjeeling ...	.....	An insignificant quantity cultivated.					.....		.....
	Julpigoree ...	Repeated ploughings		14 4 0		2 10 0		4 2 0		1 1 6
	Cooch Behar ...	Ditto ditto ...		9 0 0		1 8 0		6 0 0		1 8 0
DACCA.	Dacca ...	5 ploughings ...		5 0 0		1 8 0		1 8 0		0 4 0
	Fureedpore ...	8, 10, or 12 ploughings		6 8 0		1 8 0		.....		.....
	Backergunge...	.....	None grown.							
	Mymensing ...	26 to 32 ploughings	3 4 0 to	4 0 0		0 8 0	2 0 0 to	8 0 0		.....
CHITTAGONG.	Chittagong ...	12 on alluvial lands cess.	9 0 0 to	12 0 0	3 0 0 to	4 0 0		1 8 0	0 10 0 to	0 12 0
	Noakholly ...	.....		.....		.....		.....		Tobacco not
	Tipperah ...	2 ploughings ...		1 8 0		1 0 0		.....		1 4 0
	Chittagong Hill Tracts.	.....*		2 0 0		0 8 0		.....		0 8 0
	Hill Tipperah	.....		.....		.....		.....		.....

\* Including cost

## DIX B.

BENGAL, 1873-74.

ration per Acre.

Irrigation.	Weeding.		Trimming stems.		Cutting.		Curing.	Total per acre.		
Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
3 0 0		2 0 0	Included in weed-		1 8 0	Included		15 0 0		
2 4 0		2 10 0	ing.	3 0 0	0 12 0	in cutting.	1 8 0	17 12 0 or 12 0 0 to 18 0 0		
0 12 0		0 12 0		3 6 0	0 12 0	0 12 0	0 12 0	Rs. 17-4. Recut Rs. 9 = Rs. 26-4		
2 7 0		1 5 0		4 15 0	Included in weed-	6 3 0		per acre, or Rs. 8-12 per beegha.		23 15 0
1 8 0		5 4 0		9 0 0	ing.	6 12 0	3 0 0	Rs. 41-12. Exclusive of rent Rs. 18		
0 11 0		0 6 0		1 12 0		3 0 0	.....	to 24 per acre.		15 0 0
18 0 0		3 0 0		9 0 0		1 8 0	4 8 0	Rs. 19 12 per beegha, or Rs. 61-4		
6 0 0		1 8 0		3 0 0		1 8 0	10 8 0	per acre, including rent Rs. 2		
2 8 0		2 4 0		2 4 0		4 8 0	2 4 0	per beegha.		
								Rs. 62-10, including Rs. 6-6 rent.		28 13 0
1 8 2		2 4 3		1 8 2		2 4 3	3 0 5			21 5 10 to 24 9 3
3 0 0		4 0 0	Included in weed-		2 8 0	6 0 0				46 0 0 to 30 0 0
0 8 0	.....*		ing.	0 6 0	0 2 0	.....				4 8 0 to 6 0 0
.....		5 0 0		.....	3 0 0	3 0 0		Rs. 20-8+7-8 rent = Rs. 28.		
.....	.....			.....	.....	.....				26 0 0
2 0 0		4 0 0	Included in weed-		0 12 0	5 0 0		Rs. 7-8 per beegha, or Rs. 58-8		
(per bgh.)			ing.	3 0 0		6 0 0	Including	per acre, including rent Rs. 2		
.....		3 0 0					curing	per beegha.		21 0 0 to 30 0 0
.....	.....			.....	.....	.....				11 0 0 to 15 0 0
5 0 0		8 12 0		6 2 0	2 3 0	3 15 0				48 1 4
1 8 0		3 0 0		3 0 0	3 0 0	4 8 0				33 0 0
.....		2 8 0		1 0 0	0 10 0	1 0 6				13 6 0 to 13 8 0
.....		4 4 0		5 0 0	2 12 0	5 0 0				25 0 0 to 30 0 0
.....	1 8 0 to 2 4 0		1 8 0 to 2 4 0		1 8 0 to 2 4 0	Included				10 0 0 to 14 0 0
						in cutting.				
4 8 0		3 4 0		4 0 0	2 0 0	3 8 0				31 6 0 to 35 8 0
grown in this district.			.....	.....	.....	.....				.....
.....		2 8 0		3 0 0	0 12 0	4 0 0		Rs. 16-8, including rent Rs. 2-8.		
.....		2 0 0		0 8 0	1 0 0	1 8 0				8 0 0
.....	.....		.....	.....	.....	.....				.....

of weeding.

DIVISIONS.	Districts.	Number of ploughings.	Cost of tillage.			Transplanting.			Manure.			Cost of seed.		
			Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
PATNA.	Patna ...	4 ploughings ...	2	4	0	0	12	0	0	12	0	0	2	0
	Gya ...	.....	.....			.....			.....			.....		
	Shahabad ...	2 ploughings ...	Cannot be supplied; is sown near homesteads.											
	Tirhoot ...	.....	8	11	0	0	6	0	.....			0	4	0
	Sarun ...	.....	(per beegha.)			(per beegha.)			.....			(per beegha.)		
BHAGULPORE.	Chumparun ..	Repeated ploughings	2	8	0	3	0	0	2	4	0	0	4	0 to 0 10 0
	Monghyr ...	Several ...	4	0	0	1	0	0	2	0	0	0	4	0
	Bhagulpore ...	8 ploughings ...	7	0	0	1	0	0	2	0	0	0	4	0
	Purneah ...	12 ditto ...	12	0	0	6	0	0	3	0	0	1	1	6
ORISSA.	Sonthal Pergunnahs.	8 or 9 ditto ...	3	6	0	2	4	0	.....			not sold ...		
	Cuttack ...	15 ditto ...	3	0	0	3	0	0	.....			0	4	0
	Pooree ...	10 ditto ...	3	0	0	2	0	0	.....			0	8	0
CHOTA NAGPORE.	Balasore ...	10 ditto ...	2	8	0	1	8	0	0	12	0	0	4	0
	Hazareebagh...	About 10 ploughings.	1	8	0	1	0	0	1	0	0	0	4	0
	Lohardugga ...	Ditto ditto ...	4	12	0	0	12	0	0	12	0	0	1	6
	Singbhoom ...	Repeated ditto ...	No information can be furnished.											
	Manbhoom ...	4 or 5 ditto ...	1	4	0	0	8	0	1	0	0	0	2	0

\* The jungle in the land is cut down, and, when dry, it is burnt

Irrigation.	Weeding.	Trimming stems.	Cutting.	Curing.	Total per acre.
Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P. Rs. A. P. Rs. A. P.
Not ordina- rily prac- tised. Tobacco is not grown	1 8 0	1 0 0	1 2 0	1 2 0	Rs. 20-10, including Rs. 12 for rent per acre.
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	20 0 0
.....	2 4 0 (per beegha)	3 0 0 (per beegha)	0 5 0 (per bgh.)	15 0 0 (per bgh.)	29 14 0 per beegha.
.....	.....	.....	.....	.....	6 0 0 to 7 0 0
5 0 0	5 0 0	1 0 0	1 0 0	4 0 0	20 0 0 to 25 0 0
0 8 0	4 0 0	2 0 0	3 0 0	2 0 0	14 12 0 + 4 0 0
0 14 0	1 2 0	6 0 0	0 3 0	2 4 0	Rs. 20-11+Rs. 8 for rent=Rs. 28- 11.
3 0 0	3 0 0	9 0 0	Included in trim- ming stems.	3 0 0	13 0 0
4 8 0	0 2 0	.....	1 8 0	3 0 0	26 10 0
5 0 0	.....	6 4 0	2 0 0	.....	Rs. 19-8+12-8 for rent=Rs. 32.
3 0 0	0 8 0	1 8 0	1 0 0	2 0 0	4 8 0 = 18 0 0
3 8 0	1 8 0	2 0 0	1 8 0	1 8 0	5 0 0 = 20 0 0
.....	1 0 0	1 0 0	0 8 0	0 12 0	7 0 0
10 12 0	3 8 0	6 0 0	1 0 0	0 13 0	29 0 0 to 49 0 0
.....	.....	.....	.....	.....	Rs. 6 to 8, or Rs. 9 per beegha.
1 0 0	1 8 0	0 4 0	0 2 0	0 2 0	Rs. 4-10-0 to 5-0-0+Re. 1 for rent=Rs. 6.

The seed is then sown broadcast, and afterwards part is transplanted.

## APPENDIX C.

---

### IMPORTATION OF SKILLED GROWERS AND CURERS. OPINIONS OF THE DISTRICT OFFICERS—BENGAL.

#### The Officiating Collector of Burdwan—

“The tobacco cultivation in this district is very insignificant, being confined to a few places on the banks of the Bhagiruthee and Durkessur; and therefore, in my opinion, it is not worth while to go to the expense of importing a skilled tobacco curer for this district only.”

#### The Deputy Collector, Jehanabad—

“In my opinion, the importation of a skilled tobacco grower and curer from Manilla or elsewhere to instruct the native agriculturists, and supervise the introduction of a better system of cultivating, and more especially of curing, will no doubt be attended with advantage to the production of the staple and profit to the grower or others interested in the cultivation.”

#### The Officiating Collector of Bankoora—

“The extent of tobacco cultivation in this district is hardly sufficient to justify the employment of a Government curer or the like.”

#### The Officiating Collector of Beerbhoom—

“Experiments in tobacco culture, if carried on successfully on an extensive scale, under the supervision of a skilled imported tobacco grower and curer, would probably have the effect of drawing the attention of capitalists to the subject; unless this result be obtained, or the cultivation and manufacture made a State monopoly, as in France, no general improvement in these processes can be expected.”

#### The Collector of Midnapore—

“Owing to the soil and climate not being adapted to the growth of tobacco, its cultivation in this district is confined to a limited area only, and the yield is inconsiderable.”

#### The Officiating Collector of Hooghly—

“There is little or no scope for the further development of tobacco cultivation in this district than what it has already attained, and I do not think that any special agency is required in this district. I am of opinion that the service of a skilled tobacco grower and curer from Manilla will be of great benefit in those districts where tobacco is grown on an extensive scale, and from which it is a staple article of export.”

The Officiating Covenanted Deputy Collector of Howrah—

“ This district is not what would be called a tobacco-growing district, though the little that is grown seems to be considered of good quality. I do not think there is sufficient field for employing a skilled curer, and it would be premature to take any steps in the matter until a much larger extent of cultivation shall be found to exist than there appears to be at present.”

Lord Ulick Browne, Commissioner, Presidency Division—

“ Under the present feelings of prejudice with which the agriculturists of this country regard any suggestion as to changes in their system of agriculture, I think it would be waste of time to spend money in importing skilled tobacco growers and curers; but whenever Government experimental farms on a large scale are established under scientific English and continental agriculturists, then I would import skilled tobacco men.”

The Collector of 24-Pergunnahs—

“ The 24-Pergunnahs is not a large tobacco-growing district, and what is produced is for the most of very inferior quality; but I imagine that the defects in the method of cultivation, and more particularly of curing, which are known to exist here, are found in a greater or less degree in every tobacco-producing district in the country. It seems to me, therefore, that what is chiefly wanted is some *general* instruction in the cultivation of tobacco rather than particular instruction in the cultivation of any given variety, and in this respect no doubt the services of skilled growers and curers of tobacco would be invaluable.”

The Collector of Nuddea—

“ In my opinion, the exportations of the product and the probability of success in improving it would justify Government in incurring considerable expense in endeavouring to teach better methods of cultivation and of causing them, than at present in use. Nothing, it seems to me, is likely to be gained by mere desultory experiments. A special establishment of experts should be employed.”

The Collector of Jessore—

“ It would be a very judicious step, and one quite within the bounds of the aid Government is expected to give in the experimental stage of industries which, though likely to be eventually beneficial, have not reached the point at which private speculators are willing to do what is needed from the hope of profit, to import a skilled grower and curer to superintend and instruct in the art of growing, and to direct experiments towards ascertaining the modes of growing and curing best suited to the climate.”

The Commissioner of the Rajshahye Division—

“ In this division tobacco is not grown on any extensive scale [erroneous. R. K.], the soil not being suited to its growth.

What little is grown is for home consumption only, consequently the cultivators in districts where the growth is limited would pay little attention to the directions of a skilled tobacco grower and curer."

The Superintendent of Rungpore Jail—

"The experiments I am carrying on now in the jail garden regarding the cultivation of tobacco, will not be completed in less than four or five years. One point, however, has been clearly proved by the results of the last season, that the quantity of yield increases in proportion to the quantity and quality of manure used. It will take a long time for the ignorant ryot of these districts to out-grow the time-honored ideas regarding their chief concern—agriculture; and any direct teaching by foreign growers and curers of tobacco will be looked upon with suspicion. Yet there are various ways in which the British Government, by well-directed efforts, can indirectly influence the masses."

The Officiating Collector of Moorshedabad—

"Tobacco is grown almost throughout the district, but on a very small scale and almost entirely for purely local if not personal consumption, and though the mode of cultivation, and still more of curing the leaf, might doubtless be improved by the instructions of a skilled grower and curer of tobacco (if his instructions were attended to), yet as none of the tobacco finds its way into the European market it would seem that the benefit to be derived would not justify the expense."

The Collector of Dinagepore—

"I do not consider the importation of a skilled grower and curer into the district would lead to any practical improvement in the quality of the tobacco manufactured. Tobacco is grown here to a considerable extent, and the crop, as now manufactured, finds a ready sale. The hope of in time obtaining a better price for the produce therefore, will not induce the cultivators to make any change in their usual manner of cultivation."

The Officiating Collector of Maldah says—

"The cultivation is carried on to a very limited extent in this district, and the tobacco grown is for home consumption; so that I think that the native agriculturists would hardly trouble themselves to attend to the directions of a skilled tobacco grower and curer."

The Collector of Rajshahye says—

"In the north of this district a considerable quantity of tobacco is grown, though not sufficient to supply the wants of the whole district. By the importation of the skilled tobacco *curers* from Manilla or America, natives might be taught to manufacture an improved article. The question is, whether the natives would, to any extent, attempt, by greater care by increased expenditure

and by following the instructions of a competent curer, to manufacture a tobacco that would be appreciated in England, and by English consumers in India. If they could be shown that by a little more expenditure of money and care and by following instructions in the art of curing they could secure a larger *profit*, then they would certainly be glad to take advantage of such instruction."

The Officiating Collector of Bogra—

"The cultivation of tobacco appears to be carried on to a very small extent indeed. There is no locality in this district which is specially suited for it. Apparently the soil and the nature of the country are not suited to its growth."

The Collector of Pubna —

"In my opinion, the measure would be ultimately successful, though it would take time to overcome the apathy and prejudices of the people."

The Commissioner of Cooch Behar Division—

"I do not think it necessary at present to import a skilled tobacco grower and curer from Manilla, because I hope to see the cultivation and preparation of the leaf carried on in the best possible way by an European planter in the Dooars under one of the late leases."

The Deputy Commissioner, Darjeeling—

"The people seem very unwilling to extend the cultivation, and much prefer tobacco imported from the adjoining districts. I have had little experience in tobacco growing, and do not like to make a positive assertion on the subject; but I am inclined to think that the soil and the position of the ground are in fault."

The Deputy Commissioner of Julpigoree—

"In the Dooars and other parts we grow remarkably fine tobacco. The people of the district are skilled in the growth of their own tobacco. What we need is to introduce seed of a better and fine class of tobacco, and if Government will do this the services of two or three Manilla skilled cultivators and curers would be well repaid."

The Deputy Commissioner, Cooch Behar—

"The tobacco growers of Cooch Behar have little to learn in the matter of tobacco culture; and it would be a mistake to establish a model farm, or to import a skilled tobacco grower, for the purpose of teaching the ryots an art in which they are already proficient."

The Commissioner of Dacca Division—

"It is thought some instruction in the art of curing the tobacco grown in the north-west portion of the Mymensingh district might probably be attended with encouraging results. If the

measure of importing skilled producers from Manilla or elsewhere be carried out, this portion of Mymensingh may fairly be brought within the range of the experiment."

The Officiating Collector of Dacca—

"Tobacco is grown in this district almost entirely for home use; and unless it were grown on a large scale I do not think it would pay to import men to teach the art of curing, as this district is not naturally suitable for the plant as many others. I would not recommend the experiment being tried here in the first place."

The Collector of Fureedpore—

"The tobacco grown in this district is of a very inferior description, owing to the climate and the moisture in the soil. As far as this district is concerned, there would be no advantage of importing a skilled tobacco grower and curer from Manilla or elsewhere."

The Collector of Backergunge—

"Very little tobacco is grown in this district; and I have no suggestions to offer."

The Collector of Mymensingh—

"In my opinion, the importation of skilled tobacco curers from Manilla to instruct the people in the art of curing tobacco would be a measure likely to be productive of great benefit. In this district tobacco is not largely grown, the greater part of the cultivation is in the north-west of the district, but the crop is merely raised for local consumption."

The Officiating Commissioner of the Chittagong Division—

"At present, tobacco in the district of Chittagong is grown for home consumption only; and the manufacture is of the most primitive description. Rice being the staple produce of the district of this division and affording sure and large profits to the cultivators, I do not think they would readily agree, under any circumstances, to extend the cultivation of tobacco. Under these circumstances, I am not prepared to recommend the importation of a skilled grower or curer to introduce and promote the manufacture of tobacco in any of the districts of this division."

The Collector of Chittagong—

"The soil in many parts of this district seems capable of producing very good raw material; but unless Government are prepared to give direct encouragement to the cultivation, I fear it would be useless attempting to introduce a better system of curing than at present."

The Officiating Collector of Noakholly—

"Tobacco cultivation is not carried on in this district. The soil is not, I believe, adopted to the cultivation, and I would not therefore recommend the importation of a skilled grower or curer to introduce and promote the manufacture."

The Officiating Deputy Commissioner, Chittagong Hill Tracts—

“In order to introduce the system of cultivation of tobacco in India it would be necessary to induce the hill tribes to give up their present mode of cultivation. If the services of an experienced curer are obtained for any neighbouring district, I think a few intelligent joomeahs might be sent to learn the process under him.”

The Magistrate of Tipperah—

“Tobacco is not cultivated in any large quantities by the natives of this district, nor do I think the soil in general suitable for such cultivation. Only the commonest and poorest kind of tobacco is grown in patches about the high lands by the people for home consumption. I do not think that there would be much use as regards this district in importing a skilled tobacco grower and curer to instruct the native agriculturists.”

The Officiating Political Agent, Hill Tipperah—

“There is no cultivation of tobacco for exportation or sale. Under these circumstances, I have no recommendation or suggestions to make.”

The Commissioner of Patna Division—

“The proposed model farm at Poosa should be devoted, in a great measure, to tobacco-growing, and as Tirhoot is the one tobacco-growing district in this division, a skilled curer, if appointed in common with the model farm at Poosa, would be a good and useful experiment.”

The Collector of Shahabad—

“I am of opinion that the importation of skilled growers and curers from Manilla or elsewhere would not tend to beneficial results.”

The Collector of Patna—

“Tobacco is cultivated in this district on a very small scale. The area under its cultivation is so insignificant that it would not be worth while to import a skilled grower for the supervision of the cultivation in this district alone.”

The Collector of Gya—

“Tobacco is not produced in this district; such being the case, I have no suggestions to make.”

The Collector of Tirhoot—

“In my opinion it would be advisable to import a skilled tobacco grower and curer from Manilla, with a view to improving the present system of cultivating tobacco.”

The Collector of Sarun—

“Tobacco is cultivated to a very limited extent; and what is grown is of an inferior description, and used entirely for home

consumption. The introduction of a better system of cultivating, and more especially of curing tobacco, should be tried first in districts or divisions where tobacco is more extensively grown."

The Collector of Champarun—

"Tobacco cultivation in this district is so very limited that I can only give an opinion based on general ground. Speaking for this district only, I certainly would not advise recourse being had to improved tobacco cultivation or curing."

The Officiating Collector of Champarun—

"The quantity of land grown with tobacco is very insignificant indeed. I can therefore only advocate the trial of the experiments referred to on general grounds."

The Officiating Commissioner of the Bhagulpore Division—

"I do not see the advisability of commencing any special measures for the improvement of Indian tobacco, and especially, I would not at present adopt the proposal of getting a skilled tobacco grower and curer from Manilla or elsewhere. Tobacco is grown only in patches in the alluvial soil on the north of the Ganges, and the cultivation is not excessive enough to necessitate the adoption of special measures for regulating it."

The Officiating Collector of Monghyr—

"No printed direction can in any way come up to practical knowledge, and I would advise the importation of a skilled tobacco curer."

The Collector of Bhagulpore—

"As far as this district is concerned, it would be useless to import skilled tobacco growers or curers, though beyond doubt the result of importing such for certain districts might prove a most useful measure and tend to the great improvement in the tobacco grown there."

The Collector of Purneah forwards letter from a planter who writes :—

"I am convinced that improvements can be brought about by small and imperceptible degrees. I think if a man were brought from Manilla to teach the natives, there would be two difficulties to contend with: the Manilla man would stick to the details he had been accustomed to with as much pertinacity as the natives do to their own model. I would recommend an able Englishman be sent to Manilla to learn and study the whole subject. He should be a man that has already had some Indian experience. Such a man would be able to decide how much of the Manilla system was suited to Bengal, and what adaptations and modifications were necessary or possible."

The Officiating Deputy Commissioner, Sonthal Pergunnahs—

"I can really give no information that would be of any value. This district is backward in agriculture, even in the matter of rice.

If I am to give an opinion on the advisability of importing a skilled tobacco manufacturer, I must say that I think not to do so is to throw away a great chance."

The Commissioner of the Orissa Division—

"The state of tobacco culture and trade is not so advanced in Orissa as to warrant the importation of a skilled tobacco grower and curer from Manilla."

The Collector of Cuttack—

"I have no suggestions to offer about tobacco. The indigenous tobacco is very fair, and I do not think that any improvements suggested by foreigners are likely to be adopted by the Oriyas, who understand their own climate and soils better than we do."

The Collector of Pooree—

"I am certainly of opinion that if it is desired to raise the quality of manufactured Indian tobacco, a person of skill should be employed."

The Deputy Collector of Khoordah—

"Tobacco of a good quality, even for the European markets, could, I am sure, be grown in places on the Khoordah estate where the soils have not been so far exhausted as in the Delta. It would, I think, be very difficult to induce the Khoordah people to try experiments with a view to growing tobacco for European markets."

The Acting Collector of Balasore—

"The amount of tobacco grown, or capable of being grown in this district, is too small to warrant the employment here of a skilled tobacco curer."

The Commissioner of Chota Nagpore—

"It would answer no good purpose to incur expense in encouraging the cultivation and preparation of tobacco in Chota Nagpore."

The Officiating Deputy Commissioner, Hazareebagh—

"I do not think that it would, in the least degree, repay Government to import a skilled tobacco grower and curer from Manilla or elsewhere into this district. The state of tobacco culture and the prospects of its improvements are not sufficient to render it probable that the ryots would derive any benefit from such instruction."

The Sub-Deputy Opium Agent—

"I do not think it would be advisable to incur any expense in developing the tobacco cultivation in this district until something definite has been arrived at as to the possibility of producing really good tobacco."

The Officiating Deputy Commissioner of Singhboom—

“The amount of tobacco cultivation in this district is utterly insignificant, and there is nothing either in the soil or climate peculiarly favorable for its production. For the present, the attempts to improve tobacco cultivation in this district should be confined to trying what can be done in model farms.”

The Deputy Commissioner of Manbhoom—

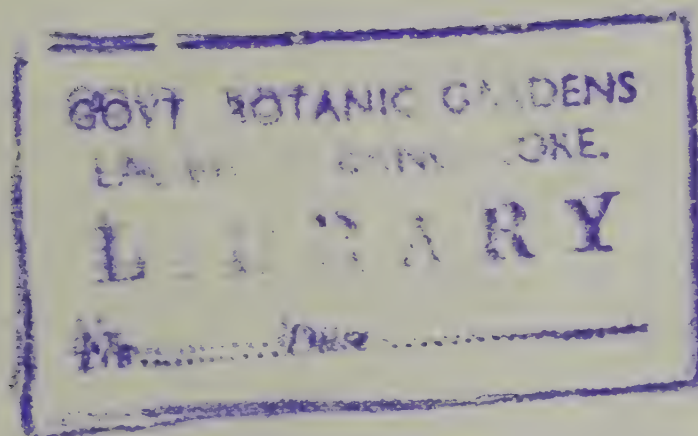
“This district is never, in my opinion, likely to become one in which tobacco will be grown to a large extent. The soil is not, I believe, well suited to the plant, and what good land there is will be required, year after year, for growth of food. I do not think it would be advisable for the Government to go to expense in trying to improve the quality or better curing of the tobacco likely to be grown here.”

---

PART I.



TOBACCO IN BENGAL.





## TOBACCO IN BENGAL.

---

No. 3-119, dated Calcutta, the 28th March 1873.

From—J. GEOGHEGAN, Esq., Off. Secy. to the Govt. of India,  
Department of Agriculture, Revenue and Commerce,

To—The Secy. to the Govt. of Bengal, Agricultural Dept.

I AM directed to request that you will be good enough, under the orders of His Honor the Lieutenant-Governor, to obtain and forward as complete information as it is possible to procure on the following points connected with the cultivation of tobacco :—

- 1.—Chief localities of cultivation, with particulars of climate.
- 2.—Number of acres (approximate) under cultivation during each of the last five years.
- 3.—Average quantity produced per acre.
- 4.—Cost of cultivation per acre.
- 5.—Quality and price of the crop in different localities.
- 6.—Methods of cultivation adopted :

Is high or low, or alluvial land preferred? Is irrigation practised? What is the kind of manure generally used? Is the seed sown broadcast in the fields or in seed-beds? What are the seasons of sowing, transplanting, and cutting the crop? Are the stems cut down, or are the plants allowed to stand, the leaves being plucked singly? If the latter, is a second crop ever taken?

- 7.—Method of curing adopted.

8.—Quantity of tobacco exported; shape in which exported—raw or manufactured; and value of exports.

9.—Results of notable experiments made with exotic seed.

2. I am to request that the particulars furnished may be accompanied by the opinions of such officers as have devoted attention to the matter, on the improvements required in the cultivation and curing of tobacco, and that any other information of a useful kind on record, or obtainable from district and other officers, may also be supplied. In regard to question 9, I am to observe that it is likely that information has already from time to time been communicated to the Government of India. In this case it will be sufficient to refer to the forwarding letters, stating to what department they were addressed.

---

Circular No. 11, dated Calcutta, the 3rd April 1873.

From—H. J. S. COTTON, Esq., Officiating Assistant Secretary to the Government of Bengal, Agricultural Department,

To—All Commissioners.

I AM directed to request that you will be so good as to favor the Lieutenant-Governor with as complete information as it is possible to procure on the following points in connection with the cultivation of tobacco in your division:—

1. Chief localities of cultivation, with particulars of climate.
2. Approximate number of acres under cultivation during each of the last five years.
3. Average quantity produced per acre.
4. Cost of cultivation per acre.
5. Quality and price of crop in different localities.
6. Methods of cultivation adopted. Is high or low or alluvial land preferred? Is irrigation practised? What is the kind of manure generally used? Is the seed sown broadcast in the fields or in seed beds? What are the seasons for sowing, transplanting, and cutting the crop? Are the stems cut down, or are the plants allowed to stand, the leaves being plucked singly? If the latter, is a second crop ever taken?
7. Method of curing adopted.
8. Quantity of tobacco exported; shape in which exported—raw or manufactured; and value of exports.
9. Results of notable experiments made with exotic seed.

2. The particulars furnished should be accompanied by the opinions of such officers or other persons as have devoted their attention to the subject, and all useful information available and on record should be supplied.

3. As the information has been called for by the Government of India, the Lieutenant-Governor will be glad to be favored with a complete and early report.

No. 987, dated Calcutta, the 13th May 1873.

From—H. J. S. COTTON, Esq., Officiating Assistant Secretary to the Government of Bengal, in the Agricultural Department,

To—The Secretary to the Board of Revenue, Customs, &c., Department.

I AM directed to forward, for the information of the Member in charge, the accompanying copy of a Circular No. 11, dated the 3rd April 1873, calling on Commissioners of divisions to furnish certain information on the cultivation of tobacco required by the Government of India. The local officers have also been requested to report, in the case of districts which export tobacco, the localities to which the export of tobacco is made.

2. The Lieutenant-Governor will be indebted if the Member in charge would be so good as to ascertain and report upon the tobacco export by sea. His Honor understands that much of this produce goes to Burmah, and he would desire to get fuller information on this head.

3. He would ask if any tobacco is exported to Madras or elsewhere. He has heard also that a trade to Europe has lately sprung into existence, and would be glad to be favoured with a report on the extent to which this is the case.

## EXPORTS OF COUNTRY TOBACCO FROM BRITISH INDIAN PORTS.

No. 320B, dated Fort William, the 28th June 1873.

From—T. B. LANE, Esq., Secy. to the Board of Revenue, Lower Provinces,

To—The Secretary to the Government of Bengal, Revenue Department.

WITH advertence to Government order No. 987, dated 13th ultimo, I am directed by the Member in charge to submit, with the following remarks on the points referred to by Government, the accompanying two statements showing in detail, and in separate parts, the exports of country tobacco by sea to foreign and to British Indian ports from the chief and minor ports, respectively, of the Bengal Presidency in the official years 1871-72 and 1872-73.

2. The shipments during the last official year to British Burmah from Calcutta are shown to have decreased\* in quantity by cwt. 26,953, and in value by Rs. 4,33,668, while those from the minor ports (Chittagong) also have fallen† off by cwt. 1,448 or Rs. 29,462 in value: *manufactured* tobacco is shipped for the province in very small quantities, and taken separately, shows a decrease of cwt. 327 or Rs. 5,537 in the annual shipments.

3. The exports to Madras ports in 1872-73 likewise have declined‡ viz., by cwt. 332 or Rs. 2844, to less than one-half of the shipments in the preceding year. With two exceptions, the shipments to the Madras Presidency in the two years under review have been of *manufactured* tobacco only.

4. The total exports of tobacco to Europe including the value of cigars, were:—

	Quantity. Cwt.	Value. Rs.
In 1871-72	3,421	20,816
In 1872-73	115,022	6,60,162

In 1869-70 the value of the total exports, the whole of which went to Hamburg, was Rs. 7,143, in 1870-71 the value was Rs. 14,742, and the entire shipments were for Great Britain but on continental account. It is apparent from the detailed statement that in 1872-73 there were no exports of tobacco to Gibraltar (a few cigars only having been shipped); that those to Great Britain and Italy have considerably increased; and that a trade in the article has recently commenced with the following countries of Europe, viz., France, Austria, Belgium, and Holland. The exports to Great Britain in 1872-73 also are said to have been entirely for the continental markets, principally for Germany.

5. The aggregate results of the exports of tobacco from the Bengal Presidency, as compared for the two past official years, are noted below:—

To	In 1871-72.		In 1872-73.		In 1872-73.			
					Increase.		Decrease.	
	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.
		Rs.		Rs.		Rs.		Rs.
Foreign ports ... ..	9,458	96,529	121,071	7,41,110	111,613	6,44,581	.....	.....
British Indian ports ... ..	85,311	10,75,625	62,304	6,69,538	.....	.....	23,007	4,06,087

N.B.—The above figures for the two years include the value of cigars exported.

*Statement showing the Exports of Country Tobacco from the Subordinate Ports of the Presidency of Bengal during the following years.*

Whence exported.	Whither ex- ported.	In 1872-73.				In 1871-72.					
		Unmanufac- tured.		Total.		Unmanufac- tured.		Manufac- tured.		Total.	
		Cwt.	Value.	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.
From Chittagong { ,, Pooree ...	<i>Exports to Foreign Ports.</i>										
	Mauritius ...	6	64	6	64	...	...	...	...	...	...
	Penang ...	...	...	...	...	4	60	...	...	4	60
	Maldives ...	346	3,780	346	3,780	112	1,616	...	...	112	1,616
	Ceylon ...	142	1,763	142	1,763	182	2,413	...	...	182	2,413
	Ceylon ...	12	231	12	231	...	...	...	...	...	...
Total to Foreign ports ...		506	5,838	506	5,838	298	4,089	...	...	298	4,089
From Chittagong { Total to British	<i>Exports to British Indian Ports.</i>										
	Madras ...	...	...	...	...	...	...	4	20	4	20
	British Burmah ...	2,763	35,644	2,763	35,644	4,058	62,894	153	2,212	4,211	65,106
	Indian ports ...	2,763	35,644	2,763	35,644	4,058	62,894	157	2,232	4,215	65,126
Grand Total ...		3,269	41,482	3,269	41,482	4,356	66,983	157	2,232	4,513	69,215

*Note 1.*—There is no information in this office of the exports (if any) from the out ports to ports within the Bengal Presidency.

*Note 2.*—The trade with British Burmah is not separately shown for its chief and other ports in the out port returns furnished to this office.

CALCUTTA, CUSTOM HOUSE,

The 10th June 1873.

J. A. CRAWFORD,

Collector of Customs.

## TOBACCO IN BENGAL.

Statement showing the Exports of Country Tobacco from the Port of Calcutta during the following years.

WHITHER EXPORTED.	1872-73.						1871-72.					
	Unmanufactured.			Manufactured.			Unmanufactured.			Manufactured.		
	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.
<i>Exports to Foreign Ports—</i>												
United Kingdom ...	109,959	Rs. 6,19,305	9	Rs. 140 } *1,710 }	109,968	Rs. 6,21,155	1,259	Rs. 5,841	5	Rs. 53 } *902 }	1,264	Rs. 6,796
France ...	233	1,697	.....	2	223	1,699	.....	.....	.....	.....	.....	.....
Italy ...	4,661	36,194	.....	.....	4,661	36,194	80	882	.....	*34	80	916
Antwerp ...	81	488	.....	.....	81	488	.....	.....	.....	.....	.....	.....
Rotterdam ...	29	218	.....	.....	29	218	.....	.....	.....	.....	.....	.....
Bremen ...	.....	.....	.....	.....	.....	.....	1,072	8,572	.....	*12	1,072	8,572
Trieste ...	60	392	.....	*1	60	393	.....	.....	.....	.....	.....	.....
Gibraltar ...	.....	.....	.....	*15	.....	15	1,005	4,520	.....	.....	1,005	4,520
America ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trinidad ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Demerara ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cape of Good Hope ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Helena ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Zanzibar ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alexandria ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Suez ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Persian Gulf ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aden ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Australia ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mauritius ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
China ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Singapore ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Penang ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Malacca ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Java ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maldives and Lacadives ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ceylon ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	119,195	7,16,959	1,370	18,313	120,565	7,35,272	7,631	76,366	1,529	16,074	9,160	92,440

EXPORTS.

Exports to British Indian Ports.

	Bombay	58	640	04 {	1,031 *174	152 {	1,845	37	400	339 {	3,268 *621	376	4,254
Bombay Presidency	Tellicherry ...	2	24	260	2,015	262	2,069	11	135	276	2,804	287	3,625
	Cananore ...	...	...	337	3,286	337	3,286	...	...	427	4,824	427	4,824
	Calicut ...	...	...	86	902	86	902	...	...	280	3,420	280	3,420
	Madras ...	...	...	18	166	18	166	...	...	33	314	33	314
	Negapatam ...	...	...	20	260	20	260	...	...	28	289	28	289
	Cochin ...	...	...	92	871	92	871	...	...	231	1,864	231	1,864
	Bimlipatam ...	...	...	3	28	3	28	...	...	7	65	7	65
	Mangalore ...	...	...	15	100	15	100	5	60	30	385	35	385
	Travandram ...	...	...	1	11	1	11	...	...	2	22	2	22
Madras Presidency	Narrakel ...	...	...	7	40	7	40	...	...	...	...	...	...
	Burgallow ...	...	...	3	51	3	51	...	...	...	...	...	...
	Gopaulpore ...	...	...	77	719	79	746	...	...	147	1,304	147	1,304
	Badagory ...	2	27	2	41	2	41	...	...	30	329	30	329
	Alipce ...	...	...	8	66	8	66	...	...	71	483	71	483
	Quilandy ...	...	...	8	55	8	55	...	...	...	...	...	...
	Cocoonada ...	...	...	623	5,184	42,298	4,47,311	57,340	7,35,848	563	6,418	57,903	7,45,268
	Rangoon ...	41,675	4,41,797	25	211	1,139	13,486	2,788	27,376	21	164	2,809	27,684
British Burmah	Akyab ...	1,114	12,568	15	*677	4,665	49,796	14,090	1,67,398	253	3,833	14,343	1,71,331
	Moulmein ...	4,650	48,914	...	182	...	...	...	...	...	...	...	...
	Comorta ...	...	...	...	*700	...	...	...	...	...	...	...	...
	Port Blair ...	567	6,438	22	283	589	6,987	523	6,500	46	669	569	7,839
	Chittagong ...	69	757	...	*268	69	1,690	11	127	5	*231	16	404
	False Point ...	807	7,870	50	463	857	8,447	397	3,188	99	673	496	3,883
Bengal Presidency	Dhamrah ...	6,657	73,133	56	*114	6,713	73,635	1,713	19,101	65	511	1,775	19,612
	Balasore ...	1,030	10,290	38	502	1,068	10,878	1,102	12,583	16	197	1,118	12,798
	Pooree ...	250	2,000	...	588	250	2,000	110	890	...	...	110	890
	Chandbalee ...	798	9,101	2	...	800	9,113	...	...	...	...	...	...
	Total	57,679	6,13,559	1,862	20,335	59,541	6,33,894	78,127	9,76,656	2,969	33,843	81,086	10,10,499

Note.—The figures with asterisks represent the value of cigars.

CALCUTTA, COURT HOUSE,  
The 30th May 1873.

J. A. CRAWFORD,  
Collector of Customs.



## BURDWAN DIVISION.

No. 69, dated Burdwan, the 11th August 1873.

From—C. T. BUCKLAND, ESQ., Commissioner of the Burdwan Division,  
To—The Secretary to the Government of Bengal.

WITH reference to your circular order No. 11, dated 3rd April, I have the honor to submit a statement containing the answers given by the Collector of each district to the questions propounded by Government regarding tobacco.

2. The most noticeable feature in the returns is, that the Collector of Hooghly estimates the cost of cultivation at Rs. 38 per acre and the produce at 30 maunds per acre, whereas the other officers estimate the cost of cultivation at about Rs. 15 an acre and the produce at 9 or 10 maunds an acre. The Howrah estimate of the cost of cultivation is derived from an actual cultivator, but in this as in the other detailed estimates the rent of the land has been omitted.

3. I am afraid that discrepancies of this nature will always be found in returns prepared by a number of separate district officers. I have asked the Collector of Hooghly to explain if he can why his estimates differ so widely from those of the other district officers.

4. The estimates of the area of cultivation and also of the quantity exported are very vague, and there are no means of checking them. The descriptions of the mode of cultivation and securing the crop are more uniform and reliable.

5. A further report will be submitted when the explanation of the Collector of Hooghly is received.

---

*The following shows the particulars required in the Government Circular No. 11 of 3rd April 1873, regarding the cultivation of Tobacco in the Districts of the Burdwan Division.*

1. *Chief localities of cultivation, with particulars of climate.*

BURDWAN.—The Collector states that, from the best information available, it appears that but little tobacco is grown, few persons cultivating more than 10 or 12 cottahs with it, and that only for domestic consumption. The cultivation is confined to the lands bordering on the Damoodur, the Barakar, the Adjai, the Dalkessur, the Bhadai, and the Bhagiruthee, which are enriched by the overflowings of those rivers. The plant is most cultivated in the eastern portion of thana Jehanabad on the banks of the Damoodur. The climate of the above-named riparian tracts does not differ from that of the rest of the district.

BANKOORA.—In this district the cultivation of tobacco is practically limited to the northern portion. In Onda thana it is grown in a few

small gardens, but the amount produced is insignificant. The neighbourhood of the Damoodur river is the favorite *locale* of the plant. The climate there does not differ much from the rest of the district. From November to the middle of March it is generally dry and tolerably cool—from that time to the middle of June it is very hot; but there are occasional storms and rain. The rest of the year is wet, but less so than in the adjacent districts of Burdwan, Hooghly, &c.

BEERBHOOM.—Very little tobacco is grown here. It is, however, cultivated in small plots in seven villages in thana Sakulipore to the south-east of the district. The climate resembles Moorshedabad more than the western part of Beerbhoom.

MIDNAPORE.—The banks of the rivers Cossye and Soobunreekha are the chief localities of cultivation of tobacco, though inland fields are sometimes appropriated to the purpose. Dry, open air and pure sweet water are favorable to its growth.

HOOGHLY.—Tobacco is chiefly cultivated in the villages situated on both banks of the Damoodur and of the Kana Damoodur; is cultivated in Gopalnuggur, Nalekool, Bundipore, Singhoor, Dogatchia, &c.; but in pergunnah Bhoorsoot it is more extensively cultivated. It is also grown in several other villages in the district, but in very limited quantities, and for the exclusive use of the cultivators themselves. A rich alluvial soil consisting of admixture of clay and sand, and convenient situation of lands with respect to irrigation, are the only peculiarities which favor the cultivation of tobacco in pergunnah Bhoorsoot.

HOWRAH.—In this district tobacco is chiefly cultivated in the lands within the Damood-embankments, and in that part of pergunnah Bhoorsoot where the river Damoodur runs through it. The climate is exceedingly damp, and the dew is very heavy during the time the tobacco is on the ground. It is also grown in very small patches, for local use, in the high lands immediately surrounding the villages in the Oolooberiah, Ampta, and Bagnan thanas.

2. *Approximate number of acres under cultivation during each of the last five years.*

BURDWAN.—The cultivation does not seem to have either increased or decreased during the last five years, and as the article is grown in small detached patches of land, it is impossible to state with anything like accuracy the total number of acres under cultivation; but from the information gathered it is estimated that the area is somewhat about 1,000 acres.

BANKOORA.—No very accurate calculation can be made of the extent of cultivation, but it is estimated at about 1,000 acres.

BEERBHOOM.—The quantity of land under cultivation cannot be accurately stated at present.

MIDNAPORE.—1,000 acres may be roughly estimated as the approximate quantity of land under tobacco cultivation in this district during each of the last five years.

HOOGHLY.—There are no data to determine the different quantities of land cultivated with tobacco during the last five years, but taking

the length of the tracts along the banks of the Damoodur and the Kana Damoodur, to which the cultivation extends, it is probable that from 12,000 to 14,000 beeghas is the approximate area in which tobacco is cultivated every year.

HOWRAH.—As far as can be ascertained there have been about 50 or 60 acres only under cultivation during the last five years.

### 3. *Average quantity produced per acre.*

BURDWAN.—The produce has been variously stated by different sub-divisional officers, the Deputy Collector of Culna putting it down so low as 6 maunds per acre, and the sub-divisional officer of Jehanabad estimating it at 20 maunds per acre. The Collector is inclined to think that the average produce is about 10 or 12 maunds per acre at the most.

BANKOORA.—The average quantity produced is about 9 maunds per acre.

BEERBHOOM.—The yield is said to be from 9 to 10 maunds an acre.

MIDNAPORE.—The average quantity of produce per acre is 15 maunds.

HOOGLY.—The average quantity of tobacco produced per acre may be estimated at 30 maunds.

HOWRAH.—The average produce per acre is about 20 maunds. The produce varies from 15 to 24 maunds.

### 4. *Cost of cultivation per acre.*

BURDWAN.—The expenses for cultivating an acre of land may be estimated as follows :—

					Rs.	A.	P.
Ploughing	...	...	...	...	5	0	0
Value of seed	...	...	...	...	1	0	0
* Sowing and transplanting	...	...	...	...	1	0	0
* Weeding, breaking off tops and suckers, &c.	...	...	...	...	2	0	0
Manure	...	...	...	...	1	8	0
* Cutting and curing	...	...	...	...	1	8	0
Watering	...	...	...	...	3	0	0
Total				...	15	0	0

But when the crop is grown by the cultivator and his family without the assistance of hired labor, the items marked thus\* are not incurred, which reduce the actual cost to Rs. 7-8 only.

BANKOORA.—The cost of cultivation varies. In some places Rs. 12 per acre cover all expenses, whereas in others Rs. 18 are required. The difference is caused by labor being much dearer in the neighbourhood of the Raneegunge coal mines.

BEERBHOOM.—No trustworthy statement of the cost of cultivation has been obtained.

MIDNAPORE.—The cost of cultivation is Rs. 15 per acre.

HOOGHLY.—The following is the ordinary cost of cultivation per acre :—

				Rs.	A.	P.
Ploughing and hoeing	...	...	...	7	8	0
Manuring	...	...	...	2	0	0
Price of $1\frac{1}{2}$ seers of seed	...	...	...	0	12	0
Transplanting	...	...	...	6	0	0
Weeding	...	...	...	3	0	0
Weekly chopping of the tops of plants	...	...	...	9	0	0
Cutting the crops	...	...	...	4	8	0
Second cutting	...	...	...	2	4	0
Curing	...	...	...	3	0	0
Total	...	...	...	38	0	0

HOWRAH.—It is always a difficult matter to calculate the cost of cultivation, for most cultivators employ the members of their family—their wives, sons, and daughters, sisters, &c.—in cultivating their lands; but supposing that the ryot has to pay for hired labor, the following is as near as can be ascertained as cost of cultivating one acre :—

				Rs.	A.	P.
4 ploughings, each ploughing 6 annas per beegha, or 18 annas per acre	...	...	...	4	8	0
* Cost of $4\frac{1}{2}$ seers of seed, at 3 annas per seer	...	...	...	0	13	6
Manure, ashes, and oil-cake (castor-oil)	...	...	...	3	0	0
* Transplanting	...	...	...	1	8	0
* Weeding—3 men, at 2 annas	...	...	...	0	6	0
* Cutting off side shoots three times	...	...	...	1	2	0
* Cutting, packing, &c.	...	...	...	1	8	0
* Second cutting	...	...	...	1	8	0
Total	...	...	...	14	5	0

or say Rs. 15 per acre.

Of the foregoing items, the cost of those marked with an asterisk is seldom incurred by the ryot; it may be held to represent the value of labor bestowed. The details were received from a cultivator of tobacco. The police reports put down the cost at Rs. 15 per beegha also.

##### 5. *Quality and price of crop in different localities.*

BURDWAN.—The tobacco produced in this district is *desi* or indigenous, and is of an inferior quality. It has a bad smell, and is used by the lower classes of people only. It sells for Rs. 2 to 4 per maund. At Raneegunge it is sold at Rs. 2 to 3; at Culna, at Rs. 3 to 4; and in the remaining sub-divisions, at an uniform rate of Rs. 4 per maund.

BANKOORA.—The quality of the tobacco produced in this district is inferior. It sells for Rs. 2 to 4 a maund.

BEERBHOOM.—The tobacco grown in this district is common *desi*, and sells at Rs. 3 to  $3\frac{1}{2}$  per maund.

MIDNAPORE.—The tobacco produced in this district is generally of an inferior quality everywhere, and the price varies in different localities from Rs. 2-8 to 5 per maund.

**HOOCHLY.**—The Boorsoot tobacco which is produced in this district is a name as common in the district as Hingly and Munipore tobacco, and it has a mild flavor, which distinguishes it from other varieties and makes it largely used in the manufacture of the *bhalsa* descriptions of *gorook*. The Bhoorsoot tobacco sells from Rs. 6 to 10 per maund, according to the quality of the article. The average price may be stated to be Rs. 8 per maund.

**HOWRAH.**—The Bhoorsoot tobacco is noted for its superiority over that which is grown in other parts of Howrah, and it is believed that its fame is not confined to this district only. This tobacco is the best, and the price is from Rs. 6 to 8 per maund. The tobacco grown in other parts sells at about Rs. 5 per maund.

6. *Method of cultivation adopted. Is high or low or alluvial land preferred? Is irrigation practised? What is the kind of manure generally used? Is the seed sown broadcast in the fields or in seed-beds? What are the seasons for sowing, transplanting, and cutting the crop? Are the stems cut down; or are the plants allowed to stand, the leaves being plucked, singly? If the latter, is a second crop ever taken?*

**BURDWAN.**—Alluvial land or sandy loam is preferred to any other descriptions of land; sometimes *do* or high land, producing two crops in a year, is selected. The field is prepared by repeated ploughing, harrowing, and weeding, till it is like a garden; and is manured with cow-dung and wood-ashes, and occasionally with oil-cakes. When put out from the seed-bed into the field, the plants are watered until they take root and can draw moisture from the earth, after which no irrigation is resorted to, as it is believed to injure the crop. The seed is first sown *broadcast* on a prepared seed-bed or nursery, in the month of September. Immediately after the sowing the land is covered with plantain or *maun* leaves in order to prevent the seed from being eaten up by insects, and should it not rain on the third or fourth day, is watered morning and evening.

In October when the plants have four to six leaves and are about 3 to 4 inches high, they are planted out into the prepared field in parallel lines, the distance from plant to plant being from 18 inches to 2 feet. In November or December the ground is weeded, and the blanks left by the plants which have died are filled in by spare plants kept for the purpose in clumps.

After eight or ten leaves have been thrown out, the top or the centre shoots are destroyed, to check the further growth of the plant, and to prevent its running to seed; the object being to give as much nourishment as possible to the leaves which are suffered to remain.

The cutting takes place generally in January, and sometimes in February, when the leaves arrive at maturity, indicated by those at the bottom turning yellow, or becoming spotted, termed *basanta* (pox).

All the leaves, and the upper stem of the plant containing three to four leaves, are then cut, the lower portion being left standing in order that it may sprout again. A second *flush* is thus produced, which is cut again about two months later. It would appear that the second crop yields tobacco of a very inferior description, weaker in strength and coarser in quality.

**BANKOORA.**—The mode of cultivation is somewhat curious. Old ruined houses made of clay are levelled with the ground. The *debris* is then mixed with the soil which has been previously dug up.

The seed is sown in a nursery thus formed, protected by palm leaves, and watered morning and evening. This takes place in September. After about a month the plant will have attained a height of two inches and is ready to be transplanted. In its nursery stage it is subject to the attacks of an insect called *ghoorghooria* (the mole cricket), to repulse which the plants are occasionally drenched with turmeric dissolved in water.

The land is prepared for transplanting by constant ploughing and watering (either by artificial or natural irrigation, according to its position). It is also carefully weeded and the earth turned over immediately before the transplanting takes place.

The seedlings are planted at a distance of about  $1\frac{1}{2}$  feet from each other, and carefully tended, the land being kept quite clean, and watered at intervals of eight or nine days. At first, too, the young plants are earthed up as they grow and send out fresh leaves; when the plants are reaching maturity, care is taken to pluck up the buds as they appear, except from those intended to be kept for seed.

The crop is ready in February and March, when the plants in general are cut down, and the leaves stripped from the plants kept for seed. These latter produce a second but inferior set of leaves, from which tobacco called *gaji* is made.

**BEERBHOOM.**—Alluvial land is considered best; next to that high land and the land known as *do zamin*. The seed is first sown in small prepared beds in the peasant's homestead. This sowing takes place about the middle of August. As soon as the seeds begin to germinate, water is sprinkled on the bed; and when the seedlings are 20 or 25 days old, they are transplanted to fields manured with cow-dung, and in some cases with the urine of horses or ponies.

The crop is gathered in the cold weather, the whole plant being cut down.

**MIDNAPORE.**—The seeds are sown in the month of Assin, not broadcast in the fields, but in seed-beds manured with cow-dung, transplantation being made in the months of Kartic and Aghran. Alluvial land is preferred, and irrigation is resorted to in high lands towards the end of the month of Maugh, and the soil is supplemented by loose earth twice, viz., once in the month of Pous, when the plants have grown up a little, and a second time in the commencement of the month of Falgoon. The crop is cut in the month of Chytro or Bysack. Generally speaking the stems are cut down, but in isolated cases of unusual growth of the plants they are allowed to stand, the tobacco being plucked in the month of Chytro and a second crop being taken in Bysack.

**HOOGHTY.**—The *soona-awal*, or high land having a *doash* soil, i.e., a mixture of clay and sand, is preferred for tobacco cultivation. The seeds are first sown in seed-beds in the beginning of Assin (middle of September), and the seedlings are allowed to grow in the beds for one

month; after which, *i.e.*, in the beginning of Kartic, they are transplanted in the fields, on lands which have been ploughed and hoed. The seeds are never sown broadcast in the fields where they would be liable to be destroyed by insects. After the plants have been transplanted, if there is a timely fall of rain within a week or two, there is no need for irrigation; otherwise, the fields are irrigated once within that time. There is no further need of irrigation, and the crop suffers if there is an excess of rainfall. The only manures used are the ashes and the refuse of cow-sheds. The tops of the plants are chopped off once every week after attaining a certain growth, with a view to make the leaves, larger and thicker. The crop is cut at the end of Pous (middle of December) by cutting down the stems, but from the stumps that are left in the ground fresh leaves come out, and a second, but much inferior crop is reaped.

HOWRAH.—High lands are preferred; alluvial lands on the banks of the Damoodur river are considered the best. Irrigation is not practised.

The manure generally used consists of ashes and refuse sweepings from cow-sheds; oil-cake (that of castor-oil) is also sometimes used. Seed is sown in seed-beds, and then seedlings are transplanted. The seasons for sowing, &c., are as follows:—Sowing, Assin (October); transplanting, Kartic (November); first cutting, February; second cutting, March. At the first cutting the leaves only are cut off. The plants are sometimes cut down to within about  $1\frac{1}{2}$  inches of the ground at first, at first cutting.

#### 7. *Method of curing adopted.*

BURDWAN.—Four or five leaves are laid one over the other and stalks tied together in bundles, which are left in rows in the field, exposed to the sun during the day and to the dews at night, for a period of four or five days. When sufficiently dried they are collected and kept under pressure for some time, and on the tobacco assuming its natural colour, are stored for sale.

BANKOORA.—The leaves are only cured by exposure to the sun and dew.

BEERBHOOM.—The leaves are partially dried, and it is reported that in the process of curing they are sprinkled with a mixture of horses' urine and earth.

MIDNAPORE.—To this question the Collector replies that the plants are subject to no particular disease. In cases of withering the soil at foot of them is loosened and watered. The Collector has not understood the question in the same sense as the other Collectors.

HOOGLY.—The leaves with the stems are left in the fields after they are cut, and allowed to remain there in parallel rows for one week, unless there is fear of a fall of rain, in which case they are removed from the field earlier. ~~The leaves are then separated from the stems~~ and tied to a rope in small bundles and hung up to dry in a shady but well-ventilated place. All tobacco growers have sheds specially erected for the purpose. After the leaves are dry they are fit for manufacture

LIBRARY

No. 64 Date.....

or exportation. Some cultivators try to improve the colour of the leaves by smoking them, and with that end fill the sheds with smoke while the leaves are hung up to dry.

HOWRAH.—When the leaves are cut off holes are bored through the stems, and they are strung on a rope and packed in layers on the ground, and pressed down with clods or bricks for five or seven days, being once turned. They are then ready.

8. *Quantity of tobacco exported; shape in which exported—raw or manufactured; and value of exports. Localities to which export is made.*

BURDWAN.—It is stated that about 6,000 maunds of tobacco are exported from thana Jehanabad to the districts of Bankoora and Midnapore, the value being estimated at Rs. 24,000. The tobacco produced in other parts of the district is used for home consumption by the growers themselves; what is grown in excess of the grower's requirements is taken to the nearest market and sold.

BANKOORA.—About half the whole crop without any further preparation is sold by the producers in the hâts to the dealers, who dispose of it in the interior of this and the neighbouring districts. The quantity thus sold is valued at about Rs. 12,000.

BEERBHOOM.—The little tobacco grown in this district is sold in the local market. The district does not export tobacco; on the contrary it imports a considerable quantity, chiefly by rail.

MIDNAPORE.—Tobacco is not exported from this district.

HOOGHLY.—The Bhoorsoot tobacco and that which is grown in other villages are exported to Calcutta for sale. The quantity and the value of the export may be approximately estimated from the answers to queries 2, 3, and 5.

HOWRAH.—No reliable information has been received as to the amount exported. The Bhoorsoot tobacco alone is exported; the quantity would not exceed 400 maunds. It generally finds its way to the Calcutta markets.

9. *Results of notable experiments made with exotic seed.*

BURDWAN.—In 1869 an experiment was made with the Virginia seed, but owing perhaps to the advanced season of the year at which the seed arrived the result did not prove successful.

BANKOORA.—The Collector is not aware of any experiments having been made with the exotic seed.

BEERBHOOM.—No experiments have been recorded.

MIDNAPORE.—A small quantity of Virginia tobacco seed was experimentally sown by Baboo Nobin Chunder Nag, a zemindar, and by some of his ryots, and the tobacco produced was not inferior in quality to the best kind imported from foreign countries, though the leaves of the plant were not of a strong texture, like those of foreign tobacco.

HOOGHLY.—Baboo Joykissen Mookerjee, a zemindar of this district, was furnished with about a dram of Virginia tobacco seed for

experimental cultivation in 1870, 1871, and 1872. In 1870 it was a case of total failure, as in all the three villages in which the experiment was made the seeds were destroyed by ants; in 1871 the result was the same; but in 1872 he succeeded, with proper precautions, in getting eight or nine plants in Qotterpara. Owing, however, to the ignorance of his servants as to the method of curing the leaves in a proper manner, the tobacco was not of such good quality as was expected. One of the plants which was reserved for the purpose, yielded about an ounce of seed, and with that seed he has made the experiment again this year. In consequence, however, of the seeds having been sown nearly at the end of the cold season, the crop has only lately been cut, and the Baboo hopes to get the leaves cured this time in a proper manner.

HOWRAH.—It does not appear that any notable experiments have been made with exotic seed.

*Opinions of officers, and the information available and on record.*

BURDWAN.—No reply.

BANKOORA.—The Collector states that he has not had much experience of tobacco cultivation, but, judging from his recollections of Rungpore, he says that the inferiority of the plant in this district is due more to the cultivators than to any fault of the soil or climate.

BEERBHOOM.—No reply.

MIDNAPORE.—The Collector states that the particulars furnished have been collected from actual tobacco cultivators. No other officers or persons in this district seem to have studied the subject.

HOOGHLY.—No reply.

HOWRAH.—The Collector states that as the Damoodur runs through a soil which is rich in iron before it reaches the district, the alluvial soil on the banks is naturally well suited to the cultivation of tobacco.

C. T. BUCKLAND,

*Commissioner.*

No. 127, dated Burdwan, the 15th November 1873.

From—C. T. BUCKLAND, Esq., Commissioner of Burdwan,

To—The Secretary to the Government of Bengal, Agricultural Department.

IN continuation of my No. 69, dated 11th August last, I have the honor to forward copy of a letter No. 404 of the 3rd instant, and of its enclosures, from the Collector of Hooghly, reporting on the cost of tobacco cultivation in that district.

2. It will be seen from Mr. Pellew's present communication that he contends that his estimate for the cost of cultivation per acre was more accurate than that of the other Collectors.

3. I beg at the same time to submit, for the inspection of the Lieutenant-Governor, two boxes of cigars, as samples of the best kinds now manufactured at Chinsurah. The one are called Manillas and the other Havannas. They are made from two kinds of leaves, which are

imported from Calcutta, and samples of which are also sent herewith. The inside of the cigars is composed of the leaf said to be imported from Sandoway, and the surface is made up of the leaf which is said to come from China. These are the Chinsurah cheeroots which formerly had a European reputation, and were procurable in London. The cost of each box was only eight annas or one rupee for both.

No. 404, dated Hooghly, the 3rd November 1873.

From—F. H. PELLEW, Esq., Officiating Collector of Hooghly,  
To—The Commissioner of the Burdwan Division.

IN reply to your letter No. 311, dated 11th August 1873, I have the honor to state that a copy of your letter was forwarded to Baboo Joykissen Mookerjee, who, on the 16th October, reported to me, that on the receipt of the copy he called again for a report from his mofussil agent on the cost of tobacco cultivation, to be ascertained by local enquiry, and that he also himself examined a few actual cultivations on the subject. He is convinced that the former figures are correct, or nearly so; he impugns the accuracy of the following figures in the Burdwan report:—

				Rs.	A.	P.
Sowing and transplanting	...	...	...	1	0	0
Weeding and breaking tops	...	...	...	2	0	0
Cutting and curing	...	...	...	1	8	0

“If we take,” he continues “the daily wages of a laborer to be 3 annas a day, the following will be the least cost per beegha and acre of the above items” :—

		Per beegha.	Per acre.
		Rs. A. P.	Rs. A. P.
Sowing and transplanting, 7 laborers	...	1 5 0	3 15 0
Weekly breaking off tops for two months, 16 laborers	...	3 0 0	9 0 0
Cutting and curing, 10 to 12 laborers	...	2 0 0	6 0 0

In this he omits all charge for weeding as it is not always necessary.

2. On receiving this letter I reserved it by me in order to enquire myself when visiting the head of the Kana Nuddee, but I came across no tobacco cultivation during my hurried trip there. I then made it over to the District Superintendent of Police, who was starting for Khanakul. He has favored me with a demi-official report, which, as it appears to go very thoroughly into the matter, I beg to excuse my sending in full as it stands.

3. The report agrees much more with that of Baboo Joykissen Mookerjee than with the Burdwan and Howrah reports, and I have been at the pains to draw up a comparative table which, to the best of my ability, shows the difference between the several tables item for item, a task of some difficulty, as items enlarged on in some of the tables are totally ignored or mixed up with others in the reports from other districts. I cannot but think that the report drawn up by Baboo

Joykissen Mookerjee, omitting as it does some items, is more accurate than the Howrah and Burdwan reports, and that of the District Superintendent of Police is more accurate than any. Where work is done by home labor, it takes a great deal of pumping, if I may use the expression, to gain an idea from a ryot of the real cost of his work expressed in money; and hence doubtless the defective nature of the other reports.

4. As the amount, Rs. 3, for watering stands alone in the Burdwan report, I have placed it by itself. It is evident that the watering is slight in the extreme. The District Superintendent has included it in the ridging and transplanting, but it is omitted altogether in the other reports. I hope that the figures now submitted will prove satisfactory.

---

Rates given by the District Superintendent of Police, Hooghly.	Rates given by Baboo Joykissen Mookerjee.		Rates given by the Collector of Burdwan.		Rates given by the Collector of Howrah.	
Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Three ploughings, at Rs. 0-12-9 per beegha.	2 6 3	} Ploughing and hoeing	7 8 0	{ Ploughing ...	5 0 0	
Hoeing, including ridging ...	5 10 0		0 12 0		{ Omitted ...	...
Seed, 24 páo, at 1½ anna a páo ...	2 4 0	1 ½ seers ...	2 0 0	... ..	...	
Manuring ...	.....	.....	6 0 0	Manure ...	1 8 0	
Transplanting, 6 men at 3 annas each.	1 2 0	Two men, at 3 annas each (including sowing).	3 0 0	Sowing and transplanting	1 0 0	
Weeding and heaping earth twice round roots, 6 men, at 3 annas each.	6 12 0	Weeding only ...	9 0 0	{ Weeding, breaking off tops, and suckers.	2 0 0	
Breaking off shoots every seven days for three months, 12 men, at annas 3 each.	6 12 0	Breaking off tops weekly.	...		Cutting off side shoots, three times only.	1 2 0
Cutting of the crop; weekly plucking of leaves; 6 coolies once a week for three months = 24 × 3 annas.	13 8 0	} Cutting crop ...	4 8 0	{ Cutting and curing.	1 8 0	
First cutting, 3 coolies ...	1 14 0		Second ditto ...		2 4 0	Cutting ...
Second ditto, 3 ditto ...	1 11 0	...	3 0 0	Packing ...	...	
Curing, 15 coolies ...	8 7 0	Curing ...	...	Watering ...	...	
					12 0 0	...
				3 0 0	...	
Total ...	50 3 3	Total ...	38 0 0	Total ...	15 0 0	
					Total ...	
					14 5 6	

F. H. PELLEW,

Offg. Collector.

## CAMP CHAPADANGAH;

*October 31st, 1873.*

MY DEAR PELLEW,

IN reply to your letter of the 28th, enclosing for my perusal a bundle on the tobacco cultivation, and asking me to ascertain the actual cost of such cultivation, I have elicited the following from two (rather more than usual) intelligent individuals who have lived all their lives at and near Kaiba, four miles east of Khanakul, in the midst of the country where tobacco has been for years very largely cultivated.

With reference to the places in the district where tobacco cultivation is carried on to any extent, as far as I can learn, there is but little to the east of the Damoodur river, though on the left bank of that river a few patches all along are to be seen with tobacco growing on them, in December and January, *i.e.*, the cultivating months. Tobacco is, however, grown all along the right bank of the Damoodur in great quantities, as also all over the Khanakul pergunnah station jurisdiction. In the Khanakul jurisdiction, the chief places where the plant is cultivated are as follows: at villages Radhanagore, Balpore, Pantosi, Konokpore, Kookoori, Duffer Chuck, Chingari, and other villages to the south. It is also largely cultivated in the Phari jurisdiction of Manjpore, as also in the Jehanabad thana, to the north of Khanakul.

The land is now under cultivation, *i.e.*, ploughing and preparing the land for the seedlings has commenced. The seedlings are now two or three inches high, and in a fortnight or so will be transplanted into the prepared ground in rows, each plant two hâths distant from the other. The seedlings are planted out in ridges like potatoes, and are irrigated once or twice till the plants have fairly taken root in the new soil, after which no further irrigation is required. When the plant is growing large the main stem is stripped of its offshoots, and kept continually clear of them, so that the whole strength of the plant may be devoted to the leaves, and every week or so the bottom leaves are taken off, as soon as they get old enough. When the plant is about three months' old, *i.e.*, three months after transplanation, it is cut in halves, and the leaves of the upper half make the best tobacco. Fifteen days or so after, the lower part of the plant is cut, and yields a crop which is inferior in quality, but more in quantity, than the first cutting.

There are several sorts of tobacco grown in Khanakul, but the Bhoorsoot is considered the finest, the cost of cultivating which, I give as follows: Rs. 16-11-9, cost of cultivation per beegha, will appear excessive when compared with rates per acre in the Commissioner's letter, and it is Rs. 3 in excess of Baboo Joykissen Mookerjee's estimates; but please remember that I have reckoned the cost considering that you or I went to Khanakul and hired a beegha of land and had to trust entirely to hired labor for our tobacco crop. I can hardly see how the land could be cultivated at a cost of Rs. 15 only per acre; or Rs. 5 the beegha, as given by the Collectors of the other districts of the division.

*Cost of cultivating a beegha of best Bhoorsoot tobacco-land to yield 20 maunds (an average crop), valued at Rs. 5 the maund for tobacco of the first cutting, and at Rs. 3 the maund for tobacco of the second cutting.*

	Rs.	A.	P.
Three ploughings, at 4 annas 3 pie each ploughing ( <i>julpani</i> included); four ploughings are necessary in some lands, but three ploughings are ordinarily sufficient ...	0	12	9
Cost of seedlings from a nursery, at 6 pice a pào, 8 pãos to a beegha ...	0	12	0
Irrigation, what little is required, is included. { Ten coolies, 3 annas each, making land into ridges, Re. 1-14; two coolies for transplanting, 3 annas each, 6 annas ...	2	4	0
Total ...	3	12	9
<i>Khol</i> of crushed oil-cake is never used, nor manure of any kind whatever.			
After transplanting, 6 coolies, at 3 annas each, are required twice to heap up the earth to roots, to weed and irrigate, if necessary ...	2	4	0
To break off shoots from stem, every 7 days for 3 months, 12 coolies at the rate of Rs. 4 a month, at 3 annas each ...	2	4	0
One month after seedling is transplanted the leaves are plucked as they get ripe, generally once a week, 2 coolies employed once a week, 8 coolies a month + 3 for 3 months, 24 coolies at 3 annas each ...	4	8	0
Cost of first cutting, 3 coolies ...	0	9	0
„ second ditto ditto ...	0	9	0
Curing, 15 coolies, at 3 annas each ...	2	13	0
Total cost of cultivation per beegha ...	16	11	9
			3
Total cost of cultivation per acre ...	50	3	3
Rent of tobacco land per beegha ...	7	8	0
„ „ per acre ...	22	8	0
Total expenditure by ryot on the cultivation of 1 acre of tobacco ...	72	11	3
Produce of pluckings and first cuttings, 12 maunds per beegha at Rs. 5 a maund, Rs. 60 × 3 for an acre ...	180	0	0
Produce of second cutting, 8 maunds per beegha at Rs. 3 a maund = 24 × 3 = Rs. 72 per acre ...	72	0	0
Value of produce of one acre ...	252	0	0
Deduct expenditure of cultivation ...	72	11	3
On carriage to river, at 1 anna a maund, 60 maunds ...	3	12	0
	76	7	3
Profit per acre ...	175	8	9

If there is no mistake in the above, you will, I think, find everything as nearly correct as possible; but please remember that I have cut down the expenditure on cultivation as much as I can, according to my ideas of what a coolie can do a day, so my amount, Rs. 16-11-9 per beegha, must not be further reduced, unless on a further enquiry or careful consideration.

The cultivators do not export their own tobacco. Every year when the Damoodur is navigable, Calcutta mahajuns come up to Bhoorsoot Ghât, on the Damoodur, and buy it up and take it to Calcutta by boat. The cultivators only take it to Bhoorsoot. Mahajuns also come from Ghattal and buy up the tobacco for export to Calcutta; they take it away on hired bullocks. No tobacco finds its way to Bydobatty or down the old Benares road to Howrah; and none is conveyed out of Khanakul on bullock garries. I herewith return the bundle.

Yours sincerely,

W. D. PRATT,

*District Superintendent.*

---

*P.S.*—I note the Howrah police give Rs. 15 a beegha, or 45 an acre—Rs. 2 in excess of Joykissen's estimates, and Rs. 1-11 lower than mine.

---



## PRESIDENCY DIVISION.

---

No. 2MA, dated Calcutta, the 1st September 1873.

From—LORD H. U. BROWNE, Commissioner of the Presidency Division,  
To—The Secretary to the Government of Bengal, Agricultural Department.

WITH reference to your circulars noted on the margin,\* asking for information on certain points in connection with the cultivation of tobacco in this division, I have the honor to submit herewith the copies† of the reports submitted by the district officers of this division, furnishing the required information concerning their respective districts.

\* No. 11, dated 3rd April 1873.

„ 22 „ 13th May „

† No. 848, dated 27th August 1873, from the Collector of the 24-Pergunnahs.

No. 714G, dated 27th June 1873, from the Collector of Nuddea.

No. 119, dated 14th July 1873, from the Collector of Jessore.

2. The samples of tobacco received from the Collector of the 24-Pergunnahs are herewith submitted.

---

No. 848, dated Alipore, the 27th August 1873.

From—F. B. PEACOCK, Esq., Collector of the 24-Pergunnahs,  
To—The Commissioner of the Presidency Division.

ADVERTING to your memorandum No. 13RG, dated 28th April last, forwarding copies of Government circular No. 11, dated 3rd idem, I have the honor to forward such information as I have been able to collect on the subject of tobacco cultivation.

2. I must premise by saying that the 24-Pergunnahs is not a large tobacco-growing district, the climate being, as a rule, too damp for it, and the soil too largely impregnated with salt. It is, however, grown to a limited extent in parts of the sub-divisions of Alipore, Baraset, Satkhira, Busseerhat, and Barrackpore. The climate of these places does not differ from that of other parts of Lower Bengal; in other words, it is hot and damp, and, as I have abovementioned, such a climate is not favorable to the growth of tobacco.

3. The tobacco grown in the 24-Pergunnahs, except a portion of the produce of the Baraset sub-division, being almost entirely for home consumption, it is impossible to give with any accuracy even the approximate number of acres under cultivation during each of the last five years. For instance, the Deputy Magistrate of Satkhira has estimated the average number of acres under tobacco at 1,000. He calculates that there are sixty or sixty-one thousand homesteads in his sub-division, and assumes that each of them has attached to it a cottah of land sown with tobacco. This, however, is obviously an erroneous estimate, for he says, in another part of his report, that tobacco is chiefly grown in the thana of Kalarooa, and partially in Satkhira and Magoorah, thus excluding altogether the thanas of Kalligunge and Assasooni,

containing, according to the census report, over 25,000 houses. Again, in another sub-division of this district, containing over 33,000 houses, the cultivation is estimated at 68 acres. It is evident that we have no sufficient data to go upon, and any estimate, therefore, of the quantity of land under cultivation must be unreliable and misleading. With the sub-executive agency now at my disposal it would no doubt be quite possible to obtain very fairly accurate statistics, but it would take time, and in a non-tobacco growing district like this it is doubtful whether the value or the utility of the information when collected would be at all commensurate with the time and labor spent in collecting it.

4. The average quantity of tobacco produced per acre is from nine to twelve maunds, and the average cost of cultivation from Rs. 40 to Rs. 50. The Joint-Magistrate of Baraset, who has made very careful enquiries, gives the following details of cost of cultivating a standard beegha—

					Rs.	A.	P.
Rent of land	...	...	...	...	2	0	0
Cost of ploughing	...	...	...	...	6	0	0
„ of manure	...	...	...	...	2	0	0
Sowing and transplanting	...	...	...	...	1	0	0
Irrigation	...	...	...	...	2	0	0
Cutting and gathering	...	...	...	...	4	0	0
Total				...	17	0	0

or Rs. 51 per acre. I think this is a somewhat high figure, and that it will be safer to take the cost as I have given it above, viz., from Rs. 40 to Rs. 50 per acre.

5. The best tobacco in this district is grown in the northern part of the Baraset sub-division. The Joint-Magistrate has mentioned the names of six varieties, all of which are grown there. He has not, however, been able as yet to discover whether these varieties are caused by a difference in the plant, or by a difference in the soil, or by a different mode of cultivation. The names of these varieties are—

1. Hingli, called after a village of that name in the Habahra thana. This is a mild, fine flavored tobacco, much esteemed by smokers, and sells for Rs. 7 or Rs. 8 a maund. I forward a sample for your inspection.

2. Muttihara, also named after a village in the same part of the sub-division. This is a strong, coarse kind of tobacco, and fetches Rs. 4 or 5 Rs. per maund.

3. Konchara, a very coarse, rough tobacco, used by the peasantry.

4. Pools

5. Manohatta

} These are milder kinds used for qualifying the

strength of the Konchra and Muttihara varieties, and selling for a smaller price.

The 6th kind is called Pankote, from the resemblance of its leaves in shape to pân leaves. This is the most valuable kind grown, and fetches a high price—Rs. 14 per maund.

The tobacco cultivation in Satkhira is known by the name of Baran. It is of inferior quality, with large leaves, but wanting in nicotine. Its price is about Rs. 5-8 per maund.

From all I have been able to gather, the tobacco grown in this district is, with the exception of one or two kinds produced in Baraset, of a very inferior quality.

6. The method of cultivation is the same throughout the district. High land, such as alluvial soil on the banks of dry nullahs or round bheels, or the deserted sites of old houses or indigo factories, is invariably selected. Irrigation is occasionally resorted to when the moisture has quite dried out of the soil; the plant does not, however, appear to require much moisture. The land selected is manured with old cow-dung, the earth dug out of dried-up tanks or bheels, or from the sites of deserted huts. The ryots begin to prepare the land as early as February by ploughing it three or four times. Each succeeding month the land is turned over twice or thrice, so that the weeds and grasses may be thoroughly eradicated and the manure well mixed with the soil. In the latter end of August the seed is sown in a nursery, and in October, when the young seedlings have obtained a height from four to six inches, they are planted out at regular intervals. When the plants are about two feet high the flower stalk begins to show, but this is nipped off from all except the plants reserved for seed. This has the effect of throwing the sap into the leaves and increasing their size; it also causes small shoots to appear on the main stem just below the leaves. These shoots are removed, so that the whole vitality may become concentrated in the leaves. In February or March the crop is harvested, the stems and the leaves are cut down, the stumps being left standing. From these new branches shoot up, of which one or two only are allowed to remain, the remainder being cut off. These branches in due course throw out leaves from which a second crop is gathered.

7. After the stems are cut down they are collected altogether in one place, and cut into pieces, each piece having two or three leaves. They are then spread over a piece of grass land with the view of keeping the leaves free from dust, and exposed for three or four days and nights. They are then taken to the ryot's house and sown together with string made of thatching grass, and hung up in some shady place until the leaves have become so far dry as to assume a pale-brown colour, and finally, before being considered to be fit for market, they are hung out in the first fog that occurs in order to soften them.

8. Of the tobacco grown in Baraset, the little that is not used for home consumption is sent to the Calcutta market in its raw state. Tobacco grown in other parts of the district is almost entirely consumed by the grower and his family; if his crop exceeds his own requirements, the surplus is carried to some neighbouring hât and there disposed of.

9. The Satkhira Agricultural Society have endeavored to grow tobacco from Virginia seed, but the attempt was unsuccessful. The Society's report on the subject was forwarded with my memorandum, No. 1582, dated 7th February last. No other experiments with imported seeds have been tried in this district, but a further attempt with Virginia seed will be made this year on the Baraset model farm, the result of which will be reported in due course.

10. I may mention, in conclusion, that it has been reported by the officer who was deputed by me to make enquiries in the sudder

sub-division, that the people were not forward in giving information. They had already got scent of the Government circular, and appear to have jumped to the conclusion that tobacco was to be the next thing taxed. Hence their reluctance to supply us with any information that they could keep back. I should add that I have had no complaint of this kind from any other sub-divisional officers.

No. 714G, dated Kishnaghur, the 27th June 1873.

From—C. C. STEVENS, Esq., Offg. Collector of Nuddea,

To—The Commissioner of the Presidency Division.

IN reply to your No. 13RG, dated 28th April 1873, I have the honor to make the following report.

2. Tobacco is grown throughout this district. It is, however, generally grown merely for domestic use, and it is only in the southern portions of the Ranaghat and Bongong sub-divisions that it forms an important crop. A cool, damp climate is supposed to be the most favorable.

3. I regret my inability to state what area of land has been cultivated with tobacco during each of the past five years. Throughout the greater part of the district tobacco is grown in very small patches, the area of which it is difficult to estimate without special enquiry. Roughly speaking, I should say that the quantity of land under tobacco is 8,000 or 9,000 acres, of which about two-thirds is situated in the sub-divisions of Ranaghat and Bongong. The fluctuations during the last five years are believed to have been slight.

4. The average quantity of produce per acre is said to be about nine maunds.

5. The cost of cultivation appears to vary considerably.

In Bongong it is said to be from Rs. 21 to Rs. 30 per acre; in Ranaghat it is estimated at nearly Rs. 54 per acre; in Chooadangah the cost is said to be Rs. 16-8 per acre; in Meherpore Rs. 34 per acre; in the sudder Rs. 18 per acre; and in Kooshtea Rs. 10 to Rs. 12 per acre. In considering these various estimates, it must be remembered—first, that only in the two first-named sub-divisions can tobacco be fairly called a crop; and, secondly, that the quality of the produce of those two sub-divisions is deemed to be very good, and probably more care is devoted to the cultivation. The details of expenses supplied by the Deputy Magistrate of Ranaghat are as follows :—

					Rs.	A.	P.
Manuring	...	...	...	...	6	0	0
Ploughing	...	...	...	...	21	0	0
Planting	...	...	...	...	2	4	0
Digging	...	...	...	...	6	0	0
Irrigation	...	...	...	...	6	0	0
Topping, &c.	...	...	...	...	3	0	0
Cutting, &c.	...	...	...	...	3	0	0
Rent	...	...	...	...	6	6	0
Total					53	10	0

Several of the items appear to me to be excessive, and I am more disposed to rely on the estimate of the Assistant Collector of Bongong.

6. The quality and price vary considerably. The best tobacco is called the Hingli tobacco, from Hingli, a village in the Gopalnagar thana of Bongong sub-division, where a plantation of some 40 acres exists. Tobacco going by the name of Hingli tobacco is, however, grown in other places, and it is said that there is no other sort in the Ranaghat sub-division. Hingli tobacco sells for from Rs. 5 to 7 or 8 per maund. Of other descriptions the following have been mentioned to me :—

- |              |  |               |
|--------------|--|---------------|
| 1. Chotna.   |  | 3. Mandhatta. |
| 2. Panbotta. |  | 4. Baran.     |

The price of these inferior descriptions varies from Rs. 2-8 to Rs. 5 per maund,

7. High, dry, and open lands are selected for the cultivation of tobacco. In those parts of the district in which the plant is grown only for domestic consumption it is usually to be found on homestead lands.

8. The preparation of the soil commences in February; it is then ploughed, and in some parts, at least of the district, clay taken from the bottom of tanks or bheels is spread on the land. Successive ploughings go on till September, when the refuse of cow-houses is added; the land is ploughed once more and prepared for the reception of the plants.

9. The seed is soaked for a day and then sown thickly in beds carefully prepared; a seed-bed of 10 cottahs will afford plants enough to cover 10 beeghas of land when transplanted. The seeds germinate in about a week. In the course of about a month and a half the plants, which have by that time developed three or four leaves, and are two or three inches high, become ready for transplantation. While in the seed-bed it is said that they are liable to injury from fogs, and the damp is washed off then with water. The reason for this process is not quite obvious.

10. The young plants are next transplanted into the places where they are to remain; they are placed in rows from one to two feet apart. Each plant is plentifully watered and is protected from the direct rays of the sun by leaves or straw; these coverings are removed at night. In a few days the young plants become established and begin to grow rapidly. The earth is then turned up round the roots of each plant, and the branching shoots are broken off; in about a month after planting the tops of the stems are broken off so as to prevent the plant from flowering. From six to twelve leaves are left on each plant according to its size and the strength of its growth. The earth is again hoed up round the roots. The plants are watered twice, viz., once in November and once in January.

11. In January or February the plant is ready for cutting. Usually the stem is cut at about the middle or lower, the leaves being left on the upper or cut portion, and those on the stumps being also collected. These stumps sprout again, and the leaves are gathered as they become ready; this second crop is, however, invariably inferior to the first, and is kept for house consumption. The second crop is not irrigated.

12. When cut, the stems with the leaves on them are allowed to remain spread out in the sun for two hours; they are then cut into pieces, each of which consists of a pair of leaves and a portion of the stem. These pieces are then arranged on the ground in layers of nine or ten inches thick, and allowed to remain in the sun for two days. Rain, of course, at a such time is most destructive. The tobacco in this half-dried state is taken home by the cultivator, who strings the sections together, and suspends them on rows of strings in the longest apartment of his premises, usually the cow-shed.

The leaves after being thus suspended for about a month, are thoroughly cured. They are then taken down on a damp or foggy day when they are a little soft, and made into bundles of about  $1\frac{1}{2}$  maunds weight each, the strips of leaves being cut into lengths of about a yard, and folded over and laid one on another.

13. The above description relates to the Hingli tobacco of Ranaghat; the inferior sorts appear to be merely made up into bundles and subjected to the alternate action of the sun's rays by day and of the dews at night.

14. Each plant produces about a quarter of a seer at the first and a chittack or less at the second cutting. Of the first crop the upper sections are considered the best, but they are not separated from the others.

15. The strings used in the process described in paragraph 12 are made of thatching grass. The grass is cut in July when green, and soaked in water for a day and a night; it is then dried and made into bundles. The string is made by twisting together three blades.

16. It may be noted that the same land may without detriment be used for tobacco for several years continuously. But it is usual, where this is an extensive crop, to raise dhan for a year or two at occasional intervals.

17. The only manufacture of tobacco is its immediate preparation for use by powdering or cutting into small pieces and mixing with treacle and spices. The best preparation of this kind is said to be made at Santipore. The local consumers of tobacco are mostly males. Among Hindu women only prostitutes are said to use it.

18. In four sub-divisions of the district, the quantity grown is scarcely sufficient to provide for local wants. From Ranaghat and Bongong the annual export may be estimated at about 30,000 maunds, valued at about 2 to  $2\frac{1}{2}$  lakhs of rupees; it is exported in the raw state to Calcutta, Jessore, and Midnapore.

19. Experiments have been twice tried with Virginia tobacco, viz., in 1869-70 and in 1871-72. On the former occasion the seed appears to have been bad, for it did not germinate. In 1871 the seed was not received quite early enough to provide against the inevitable delays in distribution. Complaints were received from some places to the effect that the seed would not germinate, but this was probably the fault of the treatment rather than of the seed. In the Kooshtea sub-division the experimenters all found that the seed germinated, grew to the height of three inches and then died. Baboo Ramsunker Sen, Deputy Magistrate of Ranaghat, however, succeeded in raising a few plants which were very healthy; he stated that the leaves were broader

than those of country tobacco, and possessed "greater stimulant power." I do not consider the experiments at all fatal to the prospect of acclimatizing American tobacco in this country.

20. I do not enclose the reports which I have received, because I have extracted from them all that can possibly be of use. I wish, however, to bring to your notice that for most of the information on which this report is founded, I am indebted to Baboo Dinonath Addy, Deputy Collector of Ranaghat.

---

No. 119, dated Jessore, the 14th July 1873.

From—A. SMITH, Esq., Collector of Jessore,

To—The Commissioner of the Presidency Division.

WITH reference to your memorandum No. 13RG, dated 28th April 1873, and No. 26RG, dated 22nd May 1873, I have the honor to submit the following report on tobacco cultivation in this district.

2. Tobacco cultivation is not carried on on any large scale here, and there are no special tracts or localities set apart for raising the crop. Generally small patches of land quite close to the ryots' homesteads are taken up and planted for the purpose of obtaining a supply for domestic consumption only. So a plot here and a plot there may be seen covered with the plant in the dry months from November to March, which is the season for growing it.

3. There are no statistics to show the approximate area under cultivation during the last five years. In the Magoorah and Jhenidah sub-divisions 880 acres have been found to be covered with tobacco during the last season; while in the Narrail sub-division the quantity of land under tobacco is reported to be 100 acres. The other sub-divisional officers supply no information on the point, but it would not be beyond the mark to say, that the area under tobacco does not exceed 520 acres in the remaining sub-divisions, giving a total of 1,500 acres for the whole district.

4. The average produce per acre is estimated at  $13\frac{1}{2}$  maunds of 80 tolas to the seer.

5. The expense of cultivation does not amount to any appreciable sum, as the plots taken up are small in extent, and the cultivation is carried on at intervals; still, if we estimate the value of labor and the price of manure in money, the cost would not exceed Rs. 25 per acre.

6. The crop raised is very inferior in quality, and the leaves are locally consumed, principally by the growers themselves and the lower orders in general. There are several varieties, named from the peculiar configuration of the leaf, such as, háti káni (elephant ear), pân bat, or deshal (betel leaf, or country), kafipata (cabbage leaf), sibi-jatu (twisted leaf), &c.; sometimes the indigenous leaf is mixed up with imported tobacco and consumed. The price of country-grown tobacco varies from Rs. 2-8 to 4 per maund.

7. Tobacco requires a rich and dry soil, above the reach of inundation water. The land is well ploughed up in September and October, and mixed with cow-dung or indigo (site) manure. The seedlings,

which have been reared in a nursery, are then transplanted into the cultivated plot in November in rows about 18 inches apart from each other, and covered with folds of the plantain tree as a protection from the rays of the sun during the first three days. The plot is constantly weeded and kept clean, and water is applied to the roots in order to add strength to them. The lower leaves are plucked away when they have nearly withered, and the off-shoots and side-shoots of the stem are broken and thrown away in order to prevent flowering, and thus diminishing the narcotic effects of the leaf. In February and March the leaves ripen; and the stems are cut down, leaving only a few plants entire from which the ryot intends to gather the seed. There is a second crop gathered from the roots, which is called dosia or do-kati; but the flavor of the leaf so obtained is very inferior.

8. The leaves are dried in the sun, and also exposed to the dew at night, after which they are bundled up and kept either for sale or use.

9. Tobacco is not exported from Jessore. On the other hand, the chief dependence is on imports from Serajgunge and other northern districts.

10. In 1872 the sub-divisional officer at Jhenidah experimented in his garden from Virginia seed, which germinated fairly. The plants were transplanted early in February from the seed-bed; but even with the aid of manure, the majority of them did not attain full growth. The produce of 48 plants was  $2\frac{1}{2}$  seers. In 1873, Mr. Fife, of the Kattamari factory, sowed one-half cottah with plants raised from the acclimatized Virginia seed, and obtained a weight of 20 seers of tobacco.

11. In conclusion, I would venture to express an opinion that if good Virginia or Havanna seed were supplied in sufficient quantities for timely distribution amongst the ryots, it is probable that the tobacco crop may be much improved.

---

## RAJSHAHYE DIVISION.

---

No. 238, dated Berhampore, the 6th August 1873.

From—E. W. MOLONY, Esq., Commissioner of the Rajshahye Division,  
To—The Secretary to the Government of Bengal, Agricultural Department.

WITH reference to your circulars noted in the margin and reminder  
No. 22A, dated 10th July last, I have the  
honor to submit the reports submitted by  
the district officers of this division, except  
Maldah and Rajshahye, on the subject of cultivation of tobacco.

\* No. 11, dated 3rd April 1873.  
No. 22, dated 13th May 1873.

2. The reports give full information as far as it could be ascertained on the several points noticed in the circulars above quoted, and as I have no personal experience in the matter, I have nothing to add to the remarks made by the district officers. The method of cultivation appears to accord very remarkably to that sketched in the treatise forwarded with your No. 3473, dated the 25th of September 1869, but there is considerable diversity in the method of curing the leaf.

3. I cannot find out in the records of this office that there have been any experiments with exotic seed which need be noticed here. The only case in which any result was reported was submitted to your office with my No 53, dated the 29th of April 1872.

4. The reports from Maldah and Rajshahye will be submitted as soon as received. An urgent reminder has been sent.

---

No. 878, dated Pubna, the 20th June 1873.

From—W. V. G. TAYLER, Esq., Magistrate of Pubna,  
To—The Commissioner of the Rajshahye Division.

WITH reference to the orders of Government forwarded with your office memorandum of the 20th ultimo, No. 50, I have the honor to communicate such information as I have been able to collect in connection with the cultivation of tobacco in this district.

2. No particular station or village is set apart or known as the chief locality for the cultivation of tobacco, but almost as a rule, a portion of every homestead lands, and not unfrequently the sites of old and deserted houses, are devoted for its cultivation, and there is nothing particularly worthy of notice in connection with the climate of these places.

3. It is grown for home consumption only and not as an article of trade; and almost every ryot who smokes, cultivates his patch of garden with tobacco. There are about 198,7 $\frac{7}{8}$  cultivators in this district according to the census, and allowing two cottahs per ryot, we could have 6,558 acres under cultivation. There does not seem to have

been any variation during the last five years in the extent of cultivation, which is carried on in a limited scale.

4. In the villages within the jurisdiction of the sudder sub-division, the average out-turn per acre is reported to be 12 to 15 maunds, and the cost of cultivation from Rs. 15 to 18; while in the sub-district of Serajgunge, where the cultivation is carried on in a comparatively larger scale, the average yield per acre has been estimated by Mr. Nolan, the Assistant Magistrate in charge of that sub-division, at 30 maunds, and the cost of cultivation at Rs. 45 to 48, which seems to be rather high.

5. Two different kinds of tobacco-plants are grown here. The leaves of the one have two different denominations, namely, *dhal patta*, or broad leaves, and *jore katta*, or leaves much less broad than the former, plucked from the stem of the plants at the first stage of their full growth. The leaves of the other kind are called *jathi bhunj*. Of these the *dhal patta* is known to be of the superior quality, and sells at Rs. 3 to 3-8 per maund; *jathi bhunj*, which is of the second quality, sells at Rs. 2-8 to 3 per maund; and the price of *jore katta*, or inferior quality, is Rs. 1-4 to 1-8 per maund.

6. High lands are generally preferred for the cultivation of tobacco. The seed is sown on beds during the month of Bhaddra (September), whence it is transplanted during the month of Assin (October) to high lands which have been manured with cow-dung and rotten *kesari-kalai* and *haldi-watered* till the plants reach their full growth; and during the month of Falgoun (February) they are cut down at the stem, excepting a few plants which are reserved for seeds, from which alone the leaves are plucked singly. The leaves are then partly dried and put into heaps, where they are subject to pressure for two or three days, and after this process they are strung up on a cord in the shade until the hot winds have dried them, when they are fit for use.

7. During the first stage of their full growth the plants are subject to the ravages of a kind of insect, which sometimes cause great havoc both by eating up the leaves as well as by cutting the plants at the root. They remain concealed under ground during the day and commence their depredation at night. About this time the ryots take particular care, and much trouble in ferreting out these insects almost every morning and killing them in numbers, ashes are also thrown into the field, and scattered over the leaves, this last method is said to be the best remedy to resist the attack of these insects.

8. No tobacco is exported from this district, the quantity produced being insufficient for even home consumption, the total demand of which has often to be met for foreign imports.

9. Serajgunge is the centre of considerable trade in tobacco, and Mr. Nolan, the Assistant Magistrate of this place, reports that tobacco leaf is brought there by the beparees from the valley of the Teesta and also from the northern districts, namely, Rungpore, Behar, Ghoramari, Bisi Khansami, Kalighat, Bhutmari, Kukma, Kaligunge, Mochigunge, and Dinagepore, and that part of these imports are reserved for local consumption, the country tobacco requiring to be mixed with a better

quality to be palatable. The best leaf, he says, goes to Assam, where natives are said to chew it, and a fair amount is despatched to Calcutta. Mr. Mardock, Agent of the Eastern Bengal Railway, estimated that 40,000 maunds were exported to Calcutta in 1869-70, but Mr. Nolan considers these figures rather high, and estimates the total export at 25,000 maunds.

10. Mr. Nolan further states that the traders of Manikgunge, Nalchita, Raipore, Madaripore, Hajigunge, Sujanogur, and Kusin obtain supplies from Serajgunge, and that their northern tobacco sells at Rs. 5-8 to 5-5-3, and the country tobacco, at Rs. 2-8 to 3 per imperial maund.

11. No experiment is known to have been made with exotic seed, country seed having been invariably used.

12. Tobacco, as it has been already stated, is grown here for local consumption, and not as an article of trade. Hence no officer or person appears to have devoted their attention to the subject.

---

No. 287, dated Rungpore, the 25th July 1873.

From—E. G. GLAZIER, Esq., Officiating Magistrate of Rungpore,

To—The Commissioner of the Rajshahye Division.

WITH advertence to your memorandum No. 50 Circular, dated the 20th May last, I have now the honor to submit a report on tobacco cultivation prepared by Dr. Ghose, who has himself successfully experimented in the matter in the jail garden.

---

## REPORT.

### CHIEF LOCALITIES OF CULTIVATION.

1. THE pergunnahts of Kajeerhat, Kakina, and Kundi are the chief localities in the district where tobacco is extensively cultivated, and where the best varieties are produced. These three pergunnahts include the thanas of Dimla, Durwani, Juldhaka, Foranbari, and parts of the thanas of Kourgunge, Nisbetgunge, Mahigunge, and Burabari, and form a wedge-shaped tract with its broad extremity adjoining the Dinagepore district, and is upwards of 1,100 square miles in extent. It is bounded on the north-east by the river Dhurlah, and on the north by that river and the pergunnah of Patgram, which is now in the district of Julpigoree, and a great place for the cultivation of tobacco. On the west it is bounded by the district of Dinagepore, and on the south by a line which lies about six miles to the north of the civil station. The river Teesta passes through this tract and has often changed its course, whose old beds are still found scattered about the area.

The climate is marked by a heavy rainfall, being an average of 97 inches, which finds a fair natural drainage into the Dhurlah and the Teesta, and its old beds. This passage of the heavy rains through the soil has probably something to do with its tobacco-producing quality.

The rains are followed by a severe winter, extending nearly up to the end of March. hardly ever interrupted by any rainfall in showers, which is very favorable to the cultivation of this crop.

#### APPROXIMATE NUMBER OF ACRES UNDER CULTIVATION.

2. About 60,000 acres were under cultivation during each of the last five years.

3. The average produce per acre depends on the locality, the soil, the trouble taken after it, and the variety of tobacco grown. It varies from 6 to 12 maunds. In the tobacco-growing tract of country where the varieties, characterized by either long and thick or broad and thick leaves are grown, the produce amounts from 9 to 12 maunds per acre, while in the other parts of the district, the small and narrow lance-shaped leaves are cultivated, and the produce in consequence is from 6 to 9 maunds per acre.

4. The cost of cultivation per acre is shown in the following statement:—

			Rs.	A.	P.
Rent of land	...	...	...	6	0 0
Harrowing and clearing the ground	...	...	...	6	0 0
Manuring, weeding and irrigating	...	...	...	14	0 0
					<hr/>
Total	...	...	...	26	0 0
					<hr/>

This, of course, is the cost of producing the best varieties, as the inferior ones do not require either so highly-rented grounds nor so much labor. The cost also is merely an estimated one, as the real cost to the cultivator is the ground rent, the keeping of his bullocks, and the wear and tear of the implements, which last is very little. The labor is that of his own household, for which he has to pay nothing. The extensive cultivators or well-to-do *jotedars*, however, hire the whole or a portion of the labor employed. But the number of this class of producers is very small.

5. The conditions of the quality are different with different class of purchasers, according to the suitableness to the purpose for which it is required. There are three classes of purchasers who want the tobacco for three different purposes—

1st.—The Burmese who import tobacco into their country for the purpose of making *chooruts*, select the very broad and thick leaves, neither too mild nor too strong, and pay up to Rs. 7 per maund for it. The variety most prized by them is called by the people *hatee kan* from its resemblance to an elephant's ears.

2nd.—The exporters into other districts of this country and the manufacturers in the district choose two extreme varieties, one very mild and the other very strong, to make the two varieties of country manufacture called the *velsha* and *kara goorook*; the former is dearer and prized by the luxurious smokers. These purchasers pay well for the long thick leaves which are generally mild, and the price of such tobacco is from Rs. 4 to 6.

3rd.—Tobacco is also chewed by women in this and in the neighbouring districts with betel leaves. This class of consumers value the strongest varieties as the smallest quantity of them produces a fair amount of narcotism without giving the disagreeable taste of a large quantity. The variety they prize most is called *hamaku*, probably a corruption or transformation of the word *tamaku*. These leaves are small and lanceolate, and sell retail so high as from one or two leaves for the pice. *Hamaku* is grown to a very small extent in this district. For this last class of consumers a process of adulteration is practised by the dealers. They get the sweepings, dust, and broken bits of tobacco and steep them in water and sprinkle this water over inferior and stunted leaves and make them strong.

The prices of tobacco thus varies from Rs. 3 to 7 per maund, and the best qualities and the dearest varieties are not grown anywhere but in the tract of country described in the first part of this report. The very little that is grown in the east and south of the district is very inferior and is hardly ever worth more than Rs. 3 per maund.

#### METHODS OF CULTIVATION.

6. High ground is selected, low land having on it stagnant water for any time is quite unfit for the cultivation of tobacco. The soil must have a fair admixture of clay and sand. If clay preponderates over the sand, the tobacco becomes too mild, and a very sandy soil on the other hand makes it too strong. A proportion of sand in the soil is also supposed to develop the brown spots, so invariably a sign of superior quality. The grounds which yield the best tobacco are not allowed to grow any other crop and are prepared from the month of April or June by depositing heaps of cow-dung and the sweepings, consisting of straw and other organic matter in a state of putrefaction. The ground is well ploughed, and all the grass thrown off is collected in small scattered heaps and burnt. This probably burns off the vegetable fibres which cannot be assimilated into the ground, and also burns the earth a little. This latter process serves to enrich the earth. The ground is well ploughed for the second time and harrowed, all lumps pulverized and freed from all sorts of hard and fibrous substances. While this process of preparation is going on, a spot is chosen and manured for the seed-bed on which seed is sown about the end of August. Dry, sunny weather is advantageous for the sowing of seed, but if it rains the bed is protected by a thatched cover. After the seed germinates a slight sprinkling of water is used. The plants become fit for transplantation when they are about eight inches long and the leaves about three. The time for transplanting is the middle and the end of October, when the plants are put into the already prepared ground at regular intervals of thirty-six to forty inches. It is done just before sunset that the cool of the night may help the plants to fix their roots. No water is used for about two months, but when the plants become eighteen to twenty inches high, four of the lower leaves are broken off and the tip of the plant is nipped to prevent any further multiplication of leaves, at the

expense of their thickness and quality. The water is used not to any large extent, but just enough to wet the ground. If the plants are watered early, and before the process of nipping the tips, they get stunted and crumpled up.

#### MANURING.

Besides the manuring of the ground during its preparation, each plant is manured at least once a week. A *paudrette* is made of cow-dung and earth, and is kept within a radius of nine to twelve inches of the plant. I may here state that I consider cow-dung, which is almost solely used, to be the worst possible manure, especially in this district. Cows here live almost entirely on paddy straw, and their excrement cannot possibly be rich enough for any plant. I have instituted experiments on manure for tobacco in the jail garden, and the little that I had the opportunity of doing during the last season is encouraging. Last year I had two plots of land planted. The planting was done nearly six weeks later than the usual time. I had one plot manured with cow-dung and the other with human manure, and the result was that while the former came to nothing, the latter turned out superior to any grown in the neighbourhood. This year I am preparing the land to make experiments with various other manures and also with exotic seed if I can procure it.

The time for cutting depends entirely on certain indications in the leaves. They consist in the appearance of isolated spots of dryness with an areola of brown colour, and the leaves have a slightly glutinous feel. This is observed generally about the middle of March. At this time when the damp easterly winds prevail, the glutinous feel in the leaves increases, and if the leaves are cut before a change in the wind takes place, they become very superior. But if it rains before the cutting the crop gets somewhat bad. The leaves are plucked by slicing them off the stems which are allowed to stand, but no second crop is taken. The cutting is done in the forenoon, and five to seven leaves are put in one bundle and laid on the ground alongside the stems for the day's sun to dry up the leaves as much as would be done in a few hours.

#### PROCESS OF CURING.

7. In the evening the bundles are collected and hung up in their rows under a well ventilated shed until the middle veins of the leaves are quite dried up; after which the tobacco is packed. Some cultivators on the second night after the cutting hang up the bundles in open air for one night's exposure to the dew and the following day's exposure to the sun, but this process burns up the leaves too much and is not adopted by the best cultivators.

#### EXPORTATION.

8. Raw tobacco is exported from the district into two different directions:—

- (1). The export to Arracan is done by Burmese dealers, who come and stay here upwards of six months, and each man sends home from four to six *chellans*, and each *chellan* weighs about 1,200 maunds, and is of an average value

of Rs. 6,000. There being 40 to 50 Burmese merchants who come here, I estimate the quantity of exports in this direction to be about 2,40,000 maunds, having an average value of Rs. 12,00,000.

- (2). To other districts in the country, as Bograh, Sylhet and Culna, tobacco of all descriptions are exported, but these merchants who require it for the cheap country manufacture cannot compete with the Arracan merchants, and buy up what is rejected by them at an average price of Rs. 4 per maund.

The following statement will show the quantity and value of exports :—

	Quantity. Mds.	Value. Rs.
Exported to Arracan ...	2,40,000	12,00,000
„ to other districts ...	1,01,400	4,05,600
Total Exported ...	3,41,400	16,05,600
Consumption in the district ...	1,98,600	
Total produce ...	5,40,000	

The above estimates are approximate calculations from trustworthy informations collected from various sources.

No. 203, dated Berhampore, the 19th July 1873.

From—W. WAVELL, Esq., Offg. Collector of Moorshedabad,

To—The Commissioner of the Rajshahye Division.

WITH reference to Government Circular No. 11 forwarded with your No. 21 Circular, dated 29th April 1873, I have the honor to submit the following report on the cultivation of tobacco in this district.

#### CHIEF LOCALITIES OF CULTIVATION, ETC.

2. The plant is grown in all parts of the district, but on a very small scale, being almost entirely cultivated for local consumption only. The ryots generally appropriate a few cottahs of land to it annually to raise a sufficient quantity for their private use. The climate of the district appears to be not unsuited to the plant. It thrives best on “chita” lands, and elevated ground free from excessive moisture.

#### APPROXIMATE NUMBER OF ACRES, ETC., ETC.

3. Nothing approaching an accurate estimate can be formed of the extent of land employed in producing the plant, as its cultivation is confined to very small and scattered plots. It appears from the census report that there are 303,561 houses in the district. A good many of these are situated within municipalities or in what may in a country of small aggregations of inhabitants be called towns, or

belong to artizans or persons of the laboring classes who have no cultivation of their own. It may, however, I think be assumed that, allowing for the fact that the cultivation of tobacco is less common on the west than on the east of the Bhagiruthee, some 70,000 ryots cultivate a few cottahs, say three on an average, of tobacco. This cultivation would give an area of 10,500 beeghas under tobacco cultivation.

#### AVERAGE QUANTITY PRODUCED PER ACRE.

4. The average produce per acre varies from 8 to 12 maunds.

#### COST OF CULTIVATION PER ACRE.

5. The cost of cultivation per acre is from Rs. 9 to 12, or even Rs. 15.

#### QUALITY AND PRICE OF CROP IN DIFFERENT LOCALITIES.

6. Three varieties are found in the district—the *doji* and *pân bontá* more commonly grown, and the *gáchh beláti* which, as its name implies, has probably been naturalized from imported seed. These are fairly strong and pungent when reared with care, but on the whole they are, as a rule, of inferior quality. The *gáchh beláti* fetches about Rs. 4 to 6 per maund, and the *doji* Rs. 2-8.

#### METHOD OF CULTIVATION.

7. The alluvial lands not liable to floods and the *bhitas* of deserted houses, &c., are generally preferred for the growth of tobacco. Irrigation and manuring are resorted to, the manure used being that most available, cow-dung or refuse. The plant requires some care in the earlier stages of its growth. The seeds are sown in nurseries and subsequently transplanted into elevated plots of grounds, previously well ploughed or turned up with the *kodali*. The young plants are placed in rows about eighteen inches apart, and for the first few days must be protected from the rays of the sun by coverings of plaintain leaf, which are removed at night to give the plants the benefit of the dew. They are also watered twice a day. The sowings take place in September and October, transplantation in November, and the leaves are ready for gathering in February and March. They are picked off the stem from the root upwards, and the plant is then left to send forth fresh leaves for a second crop. The latter is ready in May and June, the whole plant is then cut. The produce of the second crop is, of course, far inferior to the first. A few plants are generally allowed to ripen and afford seed for the ensuing year.

#### METHOD OF CURING ADOPTED.

8. The fresh leaves are exposed to the dew at night and to the sun in the day for a few days. They are then pressed for some days longer and afterwards stored.
9. There appears to be no exportation from this district. Large quantities are, on the contrary, imported from Behar, Monghyr, Tirhoot, Bhagulpore, Dinagepore, and Rungpore. There are one or two intermediate marts for up-country tobacco in the district.

10. The only instance of experimental growth of exotic seed in the district, of which I am aware, was the cultivation of some Havanna tobacco in his garden by Mr. Stewart, toll collector of Jungipore, some years since. The specimens forwarded by him to the Agricultural and Horticultural Society were favorably noticed. Some eight years ago I experimented with seed of same kind in my garden at Rungpore, cultivating the plant and curing it exactly in the mode described, and the tobacco was of good flavor though of small leaf.

---

No. 44, dated Dinagepore, the 31st May 1873.

From—W. L. F. ROBINSON, Esq., Collector of Dinagepore,

To—The Commissioner of the Rajshahye Division.

IN reply to your No. 21, Circular of 29th April, I have the honor to submit the following answers to the questions put as to the cultivation of tobacco.

(1.) Tobacco is chiefly cultivated in the north and north-east portion of the district; the climate, like that of the rest of Eastern Bengal, may be called simply damp. It is impossible to give even the approximate number of acres under cultivation with tobacco during each of the last five years, as the lands have never been measured nor has any record ever been kept by any one of the amount of land under tobacco cultivation; but from statistical enquiries, made by order of the Board of Revenue this year, it appears that probably about 20,000 acres of land are used in this cultivation, and the average quantity produced is about 12 or 15 maunds per acre. The outturn of the crop depends very greatly on the care and expense bestowed on the cultivation of the land. To cultivate an acre really well, and if I am to say regardless of expense, would cost about Rs. 125, and the outturn would then be some 75 maunds, if all things were favorable; but the ordinary cultivator does not go beyond an expenditure of Rs. 25 or 30 per acre, and consequently has to be contented with a smaller result. An ordinary crop, as far as I can ascertain, amounts to about four or five maunds a beegha, or 12 to 15 maunds per acre. The cultivation of such a crop per acre would be Rs. 22 to 25.

(2.) The quality of the tobacco grown in this district is not first-rate. The price of the dried leaf unmanufactured is about Rs. 3-12 per maund.

(3.) The method of cultivation is as follows: a damp, but not too low, alluvial soil is preferred in this district, irrigation is very seldom practised, the seed being sown in August, and transplanted in October. There is generally no necessity for irrigating owing to the rainfall, but should it be an unusually dry season, irrigation is sometimes resorted to, and wells sunk in the field for the purpose.

(4.) Cow-dung and rotten paddy straw with ashes are the manures generally used. The seed is sown broadcast in seed-beds in August, transplantation takes place in October, and the crop is cut in March and April. The stems are cut down and dried; the leaves are

not plucked singly, but they are thinned out in that way to get a stronger crop; from the remaining leaves a second crop is not taken. The method of curing is as follows: when the leaves begin to get yellow circular spots on them the crop is ready; the plants are cut and carried to the house, where they are kept one night in a heap; the next day they are exposed in the sun so that as much juice may be absorbed as possible from the stem into the leaves. The plants are exposed in this way night and day for two or three days; they are kept inside the house for a couple of days, and the leaves are then stripped from the stem, stretched out, kept a day, and made into small bundles or handfulls. These bundles are then hung on ropes, and exposed day and night for two or three days, they are then taken into a house and hung up for from 20 to 30 days, after which the bundles are taken to pieces, the leaves separately beaten, cleaned, and smoothed out; they are again made into bundles and put under some heavy weight to keep them flat, and in this state the small bundles are either sold to paikars at the cultivators' houses or the nearest mart, and the purchasers make up larger bundles and dispose of them to the mahajuns. There are no means of ascertaining the amount of tobacco exported or the value of the exports, but it is exported after the process above described, if that can be called manufacturing. The greater part of the tobacco exported from the district finds its way down the Atrei to Dacca or Calcutta.

(5.) No notable experiments have, as far as I can learn, been made with exotic seed in this district.

(6.) Having now answered the questions asked categorically as far as I am able, I venture to add some more details on the subject of tobacco cultivation which may not be without interest.

(7.) There are two kinds of tobacco cultivated in the district, viz., the ordinary plants with broad large leaves, and another with curly crinkled leaves, which is called *Pachmia* or western tobacco, and is also sometimes called *thumakoo*. This is principally found on the north-west border of the district and is not nearly so much esteemed as the ordinary tobacco, as it is much coarser.

(8.) To cultivate tobacco really successfully the following process appears to be necessary. In Bysakh, manure is put on the land which is left till Assar or Srabun, when it is ploughed in once and harrowed twice, then a second ploughing and two more harrowings; the land should then be again manured and again ploughed in Ashin, and the ploughing should be repeated as often as a dozen times, with harrowing after each two or three ploughings, the object being to break up the land to half a cubit in depth and thoroughly to clean it and expose it to the atmosphere. It should be well and equally pulverized.

(9.) Furrows are then made and the seedlings transplanted, they should be planted two to three feet apart in transverse rows, so that a plough may be subsequently introduced, and also to prevent the leaves from rubbing against each other; transplantation should take place in the afternoon, and, if necessary, the plants should be watered next day. If plants die they should be replaced with others to prevent gaps in the rows. When the plants have taken good root, the spaces between them should be hand-ploughed and well raked to keep down

all grass and weeds and retain the soil loose; and, a little later on, the plants should be earthed up about the roots, and if the plants are attacked by worms, they must be dug out if possible. As the leaves begin to grow, the ground under and between the plants is well beaten, the object being to get the leaves dusted to prevent blight.

When the plant is well grown, the leading shoot is cut off to prevent further growth, and the leaves nearest the ground are also removed to strengthen the rest, from 10 to 15 or 16 healthy leaves only being retained, and new shoots appearing are also removed at once; cow-dung manure should also be again given between the plants while the leaves are growing. Some of the most healthy plants are generally reserved for seed, and the leaves, of course, are not taken off these, except those close to the top of the stalk.

---

No. 380, dated Bogra, the 24th July 1873.

From—C. A. KELLY, Esq., Offg. Collector of Bogra,

To—The Commissioner of Revenue, Rajshahye Division.

IN reply to your No. 50, Circular of the 20th May 1873, I have the honor to submit a report on the cultivation of tobacco in this district. The work of preparing this report was entrusted by my predecessor to Baboo Ranajay Sen, late statistical officer. I have gone over the report with him and made corrections where it appeared necessary. His knowledge of the subject was derived from enquiries made on the spot from cultivators and others, and the information he has furnished appears to have been based on careful enquiry.

2. Tobacco is not extensively cultivated in any part of this district. In all the thanas, excepting Khettal and Adamdighi where it is very rare, the cultivation of this crop appears to be carried on, but on a small scale only. There is no locality in this district which is specially suited for it.

3. The amount of land under cultivation for tobacco in 1872-73 may be estimated at about 2,846 acres. The reporting officer was unable to give the area of cultivation for the four preceding years, though he endeavoured to ascertain it, as the people had no written record and professed their inability to remember it. It appears, however, that the area has been much the same in 1872-73 as in the four preceding years.

4. The average quantity of produce per acre in 1872-73, as ascertained by enquiry in the district, was six maunds and ten seers. In the season of 1869-70 the produce is said to have greatly fallen off, but in seasons 1868-69, 1870-71, and 1871-72 it was nearly the same as in 1872-73.

5. The cost of cultivation per acre is about Rs. 7-8. This was ascertained by enquiry from the cultivators.

6. Tobacco produced in the eastern part of the district is better than that produced elsewhere; but the tobacco produced in this district appears to be very inferior to the tobacco imported from the neighbouring districts of Rungpore and Dinagepore.

7. The price of tobacco of the best quality at the end of the year 1872-73 was, in the northern part of the district, Rs. 3-8 per maund of 60 tolaks to the seer, and in the south and eastern parts, Rs. 3-12. The above-named tobacco was all imported from Rungpore and Dinagepore. The inferior kind of tobacco grown in this district was sold at Rs. 2-8 per maund throughout the district.

8. The mode of cultivation adopted here is as follows :—

The land is required to be ploughed four or five times as occasion may require, and is harrowed with the common harrow called *moyee* (মই), a frame made of two pieces of bamboo, each about four or five cubits long, with parallel bamboos across, and is cleared of weeds by a machine called *hatnanglia* (হাতনাঙ্গল), i.e., a wooden frame with bamboo prongs and a handle which is held by the cultivator. Then the field is manured and seedlings transplanted into it. The young plants after being thus transplanted are daily watered and covered in the day-time with strips of plantain tree bark to protect them from the rays of the sun until they take root, when the strips are taken off. As they begin to grow, the twigs growing from the main stem (with the exception of those at the top) and the leaves near the root, which have a bitter taste, are torn away in order that the sap may not be exhausted and that the leaves of the plant may be strong and properly developed.

9. Land neither very high nor very low is preferred for cultivation. In this district, the crop is usually planted on plots of ground (known by the name of *palan* or *adar*) adjacent to homesteads of the cultivators. But the soil in all cases must be pretty damp, and contain sand and stiff clay. Pure alluvial land is not suitable for the growth of the plant.

10. Irrigation is not practised, the seedlings being watered merely by the hand.

11. The manure generally used is old cow-dung.

12. The seed is not sown broadcast in the fields, but is at first sown broadcast in seed-beds, whence the seedlings are planted out. Such places only are selected for seed-beds which are dry, and where water does not stand. In order to save the seeds in the event of rain the seed-bed is sheltered with a straw-covering.

13. The proper season for sowing the seed is any time in September, and for transplanting any time in October. The crop is generally gathered in the latter part of January and in February.

14. The stems are sometimes cut down and sometimes not. A second crop is taken, but not always, from those that are cut at the root, from which twigs and leaves sprout again, but not from those which are left standing, from which the leaves have been plucked singly. These stems are sometimes thrown away and sometimes used for fuel. The second crop taken from the root is poor and of bad quality, hence none but the poorest people are in the habit of taking it.

15. The following method of curing tobacco is adopted :—

After separating the leaves 10 or 12 of them are tied up together and exposed for a while to the sun upon a suspended rope or bamboo. When they become a little dry the bundles are placed one upon another in a sheltered place under heavy pressure, planks, &c., being placed upon them. After a fortnight or so, when the leaves become well

compressed, they are again exposed to the sun, and when completely dried, five or six of the bundles are bound together into a larger one. Then the tobacco is considered ready for retail sale.

16. There is no export of tobacco of any kind from this district. The small quantity produced here does not even meet the wants of the cultivators.

17. The only exotic seed tried in this district is what the natives call *willyiti*, but this does not yield so good a crop as the native kind, and the natives were unable to say where it originated.

---

No. 251, dated Berhampore, the 17th August 1873.

From—E. W. MOLONY, Esq., Commissioner of the Rajshahye Division,

To—The Secretary to the Government of Bengal, Agricultural Department.

IN continuation of my No. 238, dated 8th instant, I have the honor to submit, in original, a report submitted by the Magistrate and Collector of Maldah on the cultivation of tobacco in his district.

---

No. 378, dated Maldah, the 6th August 1873.

From—F. J. ALEXANDER, Esq., Officiating Magistrate and Collector,

To—The Commissioner of the Rajshahye Division.

IN reply to your Circular No. 50 of the 20th May 1873, and enclosure, calling for information on certain points in connection with the cultivation of tobacco, I have the honor to report as follows:—

1. *Chief localities of cultivation, with particulars of climate.*

1. The cultivation of tobacco in this district is not confined to any particular locality. Almost every villager (*grihusto*) who has a little patch of land adjoining his homestead, cultivates it in tobacco for his own consumption, and any surplus produce he sells in the neighbouring bazars and *hâts* in exchange for other household commodities.

2. *Approximate number of acres under cultivation during each of the last five years.*

2. From the enquiries recently made from the zemindars, and other sources, the quantity of land cultivated in tobacco in 1872-73 was estimated to be 3,759 beeghas, equivalent to 1,240 acres, and as the cultivation is not supposed to have increased to any great extent, that may be taken as the average area cultivated during the last five years.

3. *Average quantity produced per acre.*

3. The produce per acre varies with the different species of tobacco.

The *belati* or *motihar* tobacco yields on an average  $1\frac{1}{4}$  maund to 2 maunds per beegha =  $3\frac{3}{4}$  maunds to 6 maunds per acre.

The *lotan panboota* variety is a coarser plant, and the yield is accordingly greater than the *belati*.

4. *Cost of cultivation per acre.*

4. Tobacco, as it is here grown more as a garden plant round the homesteads than as a field crop, is not an expensive one to the ryot. It comes in for a good share of attention from the inmates of the homestead, the women of the household weeding it and carefully looking after it. The cost of cultivating it may be reckoned at Re. 1-8 to Rs. 2 per beegha = Rs. 4-8 to Rs. 6 per acre.

5. *Quality and price of crop in different localities.*

5. The quality varies: the *belati* kind is most commonly known. The *lotan* or *panboota* or *desi*, is also commonly cultivated. The price of the above kinds varies from Rs. 2 to Rs. 5 per maund.

6. *Methods of cultivation adopted. Is high or low or alluvial land preferred? Is irrigation practised? What is the kind of manure generally used? Is the seed sown broadcast in the fields or in seed-beds? What are the seasons for sowing, transplanting, and cutting the crop? Are the stems cut down, or are the plants allowed to stand, the leaves being plucked singly; if the latter, is a second crop ever taken?*

6. The seed is sown in seed-beds in September, and transplanted into a piece of raised land near the *bari* or homestead in the month of October, where it is watered and carefully tended, the ash from the *chulah* and cow-dung being the manure generally used. The plant is fit to cut in January and February, when the whole plant, stem and all, are cut down. Some of the earlier leaves are, however, plucked and thrown away; this, it is said, improves the quality of the remaining leaves.

In the south-east of the district of Dinagepore, in the neighbourhood of Raigunge, and in the south-west of the district of Purneah, however, tobacco is much more extensively grown, and large fields of it may be seen; and then the leaves are plucked as they get ripe, and two or more crops are taken off the one plant.

As regards the soil best adapted to tobacco, my observations lead me to believe that a rich soil (*muttear*, loamy) produces a better quality of tobacco, while the light alluvial soils produce a larger plant of an inferior quality. In either soil the plant requires plenty of manure.

7. *Method of curing adopted.*

7. The method of curing is simple and primitive enough. The plant after being cut is placed in the roof of the hut to dry for three or four days, by which time the leaf changes colour, and it is then placed between layers of fresh *ullee* grass and pressed for 36 to 48 hours, after which it is ready for the market.

In the part of the Dinagepore district mentioned, where the cultivation is much more extensive than here, the plant goes through a more careful and complicated manipulation; the leaves after being dried in the sun, are soaked in a solution of common salt and then exposed to the dew for three nights, after which it is pressed and tied up in bundles for the market.

8. *Quantity of tobacco exported; shape in which exported—raw or manufactured; and value of exports.*

8. As stated above, tobacco in this district is grown entirely for home consumption. I have no means of stating accurately what the exports and imports of tobacco are, but the Ganges traffic returns recently published show that the imports of tobacco to places in this district exceeded the exports, both being very trifling, and which I believe to represent the real state of the case.

9. *Results of notable experiments made with exotic seed.*

9. I have not been able to obtain particulars of any such experiments.

---



## COOCH BEHAR DIVISION.

No. 144T, dated Camp Darjeeling, the 21st August 1873.

From —C. T. METCALFE, Esq., Officiating Commissioner of Cooch Behar.

To—The Secy. to the Govt. of Bengal, Agricultural Department.

I HAVE the honor to reply to your Circular No. 11 of 3rd April last, on the subject of cultivation of tobacco, in the order in which the queries have been made.

(1).—*Chief localities of cultivation with particulars of climate.*

2. The chief localities for the cultivation of tobacco in this division are Cooch Behar and Julpigoree; it is more extensively cultivated in the former than in the latter district. The soil of the southern and western portions of Cooch Behar are believed to be more adapted to the growth of tobacco than other parts.

In Julpigoree it is principally cultivated in Patgram and in those portions of the Dooars which border on Patgram and Cooch Behar, and in that portion of Boda Chakla which borders on Rungpore. It would appear that a dampish soil and a moist climate are best suited to its cultivation; the prevailing climate in these districts is moderate, never attaining the extremities of heat or cold. Rain falls throughout the year in moderate quantities, which keeps the ground saturated in all seasons. Though there is plenty of rainfall, yet it is not to be supposed that the ground suitable for tobacco cultivation is ever under water for any length of time, as the numerous rivers and streams with which the districts are intersected, rapidly carry off the surplus water. A damp climate is very suitable to the cultivation of tobacco, and lands situated in the vicinity of large and shallow rivers are more favorable to this crop.

(2).—*Approximate number of acres under cultivation during each of the last five years.*

The district officers have expressed their inability to furnish any reliable statistics under this head, and good reasons exist, for the zemindars as proprietors of land know nothing of the statistics of their estates. They are mere annuitants depending upon an annuity paid by parties to whom they have relinquished their rights for a pecuniary consideration; they are totally ignorant of the agricultural statistics of their estates, as in order to reach the person who cultivates the land, and keeps an account of them, we have to pass through several grades of under-tenants, to whom the classification of land according to produce is a matter of indifference, and whose sole object is to raise the highest sum from the next person who takes the sub-lease. Thus the records of zemindars, talookdars, jotedars, and chookaneedars, unless the holdings are small, afford no data from which we could derive reliable information. The settlement with under-tenants is not made according to classification of land. We can find nowhere a record of the actual quantity of land covered by different crops every year. We have hitherto had no existing agency which we could utilize for the purpose,

and if we had it is doubtful whether we could collect the information called for, field by field, which would be of real value. In Assam and the North-Western Provinces, where the lands are assessed every year by Mouzahdars and Lumberdars according to the nature and extent of cultivation, there can be no difficulty in getting any information connected with the agricultural statistics, but the permanent settlement and the recognition of the different under-tenures, and the absence of village putwarees, are great bars to getting any information of practical value.

The Deputy Commissioner of Cooch Behar states that about 50,000 acres were cultivated with tobacco, but considering that the chief crop of the district is tobacco, I think the above figures are much below the mark.

The Deputy Commissioner of Julpigoree being unable to give any figures about the permanently-settled tract, supplies some information about the Madaree Dooar, where the tobacco cultivation is said to be increasing. He gives the figures noted on the margin for Madaree. I think the tobacco cultivation of the whole district may be put down at 30,000 acres.

1868-69	...	60	acres.
1869-70	...	70	"
1870-71	...	90	"
1871-72	...	173	"

(3).—*The average quantity produced per acre.*

The average yield per acre varies at different places according to soil and the labor bestowed upon the cultivation. Ordinarily the yield is from 10 to 15 maunds, and when special care is taken, as noted below, an acre may produce from 20 to 30 maunds.

(4).—*Cost of cultivation per acre.*

This is also dependent upon the intention of the cultivator as to the amount of profit he wants to make from the outturn. When he intends to retain the other crops for his family consumption, and to pay the ground rent from the sale proceeds of tobacco, or when the support of his family depends solely upon the profit on tobacco which he has to exchange for rice, salt, clothes, &c., the cultivator bestows his whole labor upon its cultivation; but when the cultivation is made on a secondary consideration for the purposes of his own consumption, or for the sake of a little money for buying some fancy cloth or ornament for his wife and children, comparatively less care is bestowed upon it. Unlike other crops, the cultivation of tobacco requires a great deal of care, attention, and expenditure. The cultivators say that each plant of tobacco requires as much attention as a child does for some time after its birth. The two cases described above will be best understood from the following illustration:—

- (a). When the cultivation forms the primary consideration for the support of the cultivator, and when his whole time and labor is bestowed upon it, and when his aim and object is to raise the best crop possible, he cannot cultivate more than an acre in a year, and the cost of the cultivation may be put down as follows:—

	Rs.
His wages for twelve months, at Rs. 4 per mensem	... 48
Hire of bullock and plough	... 3
For three months cost and carriage of manure	... 9
	—
Total cost of cultivating an acre	... 60
	—

- (b). When the cultivation is made on a secondary consideration with other crops for self-consumption, or converting the outturn into money for purchasing luxuries. In this case the cultivator takes up one *hal*\* of land, or  $4\frac{1}{2}$  acres, for cultivating rice, mustard, pulse, tobacco, &c.

In this case he will cultivate say—

	Beeghas.
Rice ... ..	8
Mustard ... ..	1
Jute ... ..	1
Kalai or any other pulse ... ..	1
Fallow for grazing, including his dwelling-house and vegetable garden ... ..	2
Tobacco ... ..	1
Total ... ..	14

In order to find the cost of the beegha of tobacco, we have to take into consideration the cost of cultivating the entire *hal* of land, and then to strike the average per beegha in the following manner:—

	Rs.
Cultivator's wages for twelve months, at Rs. 4 per month ...	48
Cost of bullock and plough ... ..	12
Extra laborer required at the time of weeding ... ..	4
Cost of manure ... .. of cutting ... ..	4
Cost of manure ... ..	2
Total cost for cultivating 14 beeghas... ..	70
Or Rs. 5 per beegha. ... ..	—

At this rate the cost of cultivating an acre of tobacco, including manure may be put down at Rs. 15.

(5). *Quality and price of crop in different localities.*

The tobacco grown in the south and west of the Cooch Behar Raj and in pergunnah Patgram is of a very superior quality; in other parts of Cooch Behar and Julpigoree the crop is rather a poor one. The quality is entirely dependent upon the nature and extent of labor bestowed upon the crop. The quality will increase or decrease according to the quantity of manure and water supplied to the crop. The price is dependent on the quality, that is, colour and flavor.

In Cooch Behar the prices range from Rs. 5 to 3-8 per maund.

In Julpigoree the price of tobacco ranges from Rs. 4 and 6, respectively. The tobacco market is very fluctuating, the price varying according to the demand. In former years the price of really good tobacco in the local market was as high as Rs. 10 a maund, but since last year, there having been heavy losses in jute, the cultivators have resorted to tobacco, and the result is, that the market has been overstocked and prices have fallen. The prices also vary as the article passes through different hands. The cultivator sells to the *paikar* (an itinerant petty dealer) at his own door or at the nearest market, and the latter takes it to the nearest *goladar*, who exports it in large quantities to the

\* N.B.—A *hal* of land means the quantity of land which a man can cultivate with one plough, this is ordinarily 14 beeghas or  $4\frac{1}{2}$  acres.

*arutdars* in Calcutta. Each of these intermediate dealers charge one anna and half, or an anna on the rupee, or five to ten seers on the maund as their commission, according to the arrangements which may exist between the respective parties.

(6). *Method of cultivation adopted, &c.*

The following is the method of cultivation adopted from the sowing of seed to the cutting and storing of the crop. A small piece of land, previously enriched by addition of manure, is selected in the vicinity of the cultivator's house as a seed-bed, where seed is sown; as soon as the seed is put under the ground, layers of straw are placed over the bed as a protection to the seed against the rainfall. The seed germinates within a week, when the straw is taken off, and a thatched roof or mat placed over it to prevent its exposure to the sun and rain. When the plants are three to four inches high and roots strong enough to stand the wind and rain, the roof is taken off. During the time it remains under the roof the plants are watered, and sometimes the roof is taken off, when there is no rain, to expose them to the sun. The plants remain in seed-beds for about a month and half, and are then transplanted to the field previously prepared by the plough and well manured. During the time the plants remain in seed-beds they require nourishment in the way of pulverized manure and water, and weeding is also necessary. Irrigation is practised from the time of transplanting to the time of cutting. A short time after transplanting, the old leaves and the tops of the young plants are lopped off in order to prevent its growing too rapidly; the main object is to concentrate the sap within a few leaves in order to improve its narcotic powers and the flavor. With this view all leaves and branches, with the exception of selected leaves, are nipped at the bud as soon as they appear. Each plant requires a great deal of attention till the time of cutting.

(6 b). *Is high or low or alluvial land preferred?*

High land is generally preferred because it enables the cultivator to transplant early. Alluvial land or newly broken land is not fitted for tobacco.

(6 c). *Is irrigation practised?*

Yes, irrigation is practised to a small extent from the time of sowing to the time of cutting.

(6 d). *What is the kind of manure generally used?*

Cow-dung.

(6 e). *Is the seed sown broadcast in the field or in seed-beds?*

Broadcast in seed-beds.

(6 f). *What are the seasons for sowing, transplanting, and cutting the crop?*

Seed is sown in August and September, and transplanted in October, and the crops cut in February and March.

- (6 g). *Are the stems cut, or are the plants allowed to stand, the leaves being plucked singly?*

Generally the leaves are plucked, and the stems allowed to stand.

- (6 h). *If the latter, is a second crop ever taken?*

As a general rule a second crop is not taken; when it is taken it is used for home consumption, and is not fit for sale in the market owing to its inferiority.

- (7). *Method of curing adopted.*

The following is an extract from the report of the Deputy Commissioner of Cooch Behar on the subject:—

“After the leaves have been exposed to the sun for a day, they are tied into bundles of four leaves each and brought home; the bundles are then heaped together and thus kept in a room for five or six days. They are then hung up in a dark room and thus kept till the east winds begin to blow, towards the end of April or the beginning of May, and make the leaves a little soft. The bundles are then taken down, and several of them are tied together to make large bundles. These are heaped together on a floor covered with straw with the stems of the leaves exposed to the air. After some days the bundles are aired for a short time and again heaped together. Sometimes to give a good colour to the leaves, water boiled with powdered tobacco is sprinkled over them, but this process is only adopted when the tobacco is of inferior quality.

- (8). *Quality of tobacco exported; shape in which exported—raw or manufactured; and value of exports.*

Hitherto no steps have been taken to ascertain the exact quality exported. A very large quantity of tobacco is exported from Bhowrah Ghât on the Teesta, but no tally of the number of boats employed has unfortunately been taken.

In the next place, the mahajuns, in whose hands the business principally lies, are averse to giving any information on the supposition that some tax is contemplated on tobacco, and that they will be made to pay so much per maund on the actual quantity stated by them. They suppress the extent of their business.

The quantity exported from Cooch Behar is stated to be about 1,75,000 maunds valued at Rs. 7,00,000.

The Deputy Commissioner of Julpigoree states that 30,000 maunds are exported from that district, valued at Rs. 1,80,000; this is considerably under the mark, considering that the whole of pergunnah Patgram, and greater portion of Boda, and several places in the Dooar, depend mainly upon tobacco as the means of paying ground-rent since the falling off of the jute trade. Besides, it seems incredible that Cooch Behar, having an area of 823,937 acres, should cultivate 50,000 acres (one-sixteenth of the whole area) with tobacco, and export 1,75,000 maunds.

Julpigoree, with an area of 2,906 square miles, should export only 30,000 maunds.

The areas of Boda and Patgram alone, the two principal tobacco producing pergunnahs, amount to 208,963 acres, and if we allow two acres, or one-eighth of the whole area, which is under the mark, to the cultivation of tobacco, it gives 26,000 acres of land, and allowing twelve maunds to an acre, or four maunds to a beegha, the outturn amounts to 3,12,000 maunds; and if one-fourth of this quantity is exported to foreign districts, it amounts to 78,000 maunds, valued at Rs. 3,12,000, which would be nearer the mark.

Tobacco is exported in a raw condition in bundles. The bundles are tied up in straw and gunny, and exported by country boats by the Dhurla, Teesta, Curtoo, and Mohanuddy rivers, principally to Calcutta and neighbouring districts.

(9). *Results of notable experiments made with exotic seed.*

Colonel Haughton made some experiments of Virginia tobacco in Cooch Behar and Julpigoree, but it resulted in failure. All experiments of exotic seeds such as Carolina paddy, Hingunghat cotton, and Virginia tobacco met the same fate. Perhaps better results might be obtained if the foreign seeds are accompanied by detailed instructions as to the nature of soil, climate in which they grow, and seasons in which they are sown, transplanted, and cut.

In conclusion, I beg to forward in original a report from Captain Money, Deputy Commissioner, Julpigoree, who has apparently devoted much attention to the subject, and has placed all available information at the disposal of Government. The reports from other districts do not contain any particular information on the subject: the information contained in the report of the Deputy Commissioner, Cooch Behar, has been embodied in this.

---

No. 301, dated Julpigoree, the 21st July 1873.

From—CAPTAIN R. C. MONEY, Deputy Commissioner of Julpigoree,  
To—The Commissioner of the Cooch Behar Division.

IN submitting the following report, I have to express my regret that I have delayed so long in sending it in; this has been owing to the difficulty I have experienced in getting reliable information. As it is, I have to send in a very imperfect report.

1. The chief localities of tobacco cultivation in this district are Patgram, those portions of the Dooars which border on Patgram and Cooch Behar, and that portion of Boda Chakla which borders on Rungpore. These are the chief localities, but tobacco is grown generally all over the district. The climate of all these places is much the same, rainfall considerable, averaging 100 to 120 inches per annum. Rain general throughout the year, with exception of the winter months, December, January, and February, and in those months there are usually showers. No great cold in the cold weather, and no great heat in the hot weather, and both in hot and cold weather a peculiar want of direct power in the rays of the sun owing to the denseness of the atmosphere. The sun has greatest power in the latter part of August, September, and October, and early part of November, when the rains

are drying up. There is at this time of year a peculiarly steamy heat, reminding one at times of a hot-house at home, and the power of the sun is then intense.

Boda being further removed from the hills and jungle, is hotter than the Dooars and part of Patgram, but the climate is generally the same. The Dooars, of course, are damper than other parts of the district.

2. I have found it quite impossible to get any information as to the average number of acres under cultivation during the last five years so reliable as to be worth recording, but I have got such information as leads me to believe that without any doubt the value of land in the Dooars for tobacco cultivation is being appreciated, and the area yearly increasing. Thus the tehsildar of Madaree pergunnah, in the Dooars, states that the area of cultivation of tobacco in that pergunnah has increased as follows :—

					Acres.
1868-69	...	...	...	...	60
1869-70	...	...	...	...	70
1870-71	...	...	...	...	90
1872	...	...	...	...	175

I can get nothing from the manager of the Chaklajat office as to the area cultivated in Boda and Patgram, although it is the largest zemindaree office in the district. I am, however, confidently assured that tobacco cultivation is largely increasing yearly in Patgram. The rates paid in Patgram by cultivators for tobacco land is from Rs. 6 to 7-8 a beegha. Here land is most valuable and cultivation most carefully carried out; in the Dooars the rates are much lower, land in which tobacco is sown being classed with bastbharri lands at Rs. 1-8 or Rs. 2 per beegha.

3. The average quantity produced per acre depends entirely on the system of cultivation. Where the crop is planted for home or local use and little care taken, the produce will be 10 to 15 maunds per acre; where it is well manured, &c., and prepared for export, it is from 20 to 30 maunds per acre. Many circumstances combine to affect the crop, such as heavy rains at times of sowing which swamp the seed, or want of rain when the crop is attaining full growth, and to continued heat which dries it up.

4. Different tehsildars give very different accounts as to cost of cultivation, some saying Rs. 25 per acre, others Rs. 55; the truth is, it depends greatly on the style of cultivation, and it may be fairly estimated that, when the intention of the sower is to bring a good crop into the markets and he accordingly manures well, the cost will not be under Rs. 40 to Rs. 50 per acre, and in some cases as high as Rs. 60. This includes expenses of all kinds from sowing to sale.

5. Quality and price of the crop is again dependent on cultivation, Where little trouble is taken and the crop is merely for home use, the plant does not attain a luxurious growth. Where cultivation is well looked after, nothing could be finer than the crop such as may be seen in parts of the Dooars and Patgram.

There are two prices: that at which a class of people called *paikars* buy from the cultivators, and that at which the *paikar* sells to the mahajun. Mahajuns seldom buy direct from the cultivators. The cultivator

sells in open market retail to the *paikars* at an average rate of from Rs. 3 to Rs. 7 per maund, according to the nature of the crop; and the mahajun purchases wholesale from the *paikar* at from Rs. 3-8 or Rs. 4 to Rs. 8, the higher of these is the exceptionally good price fetched only at times. The average price at which the *paikar* buys may be said to be from Rs. 4 to Rs. 6, and at which he sells from Rs. 5 to Rs. 6-8 or Rs. 7.

The *paikars* are generally under advance to the mahajuns, the cultivators only occasionally take advances from the *paikar*. These *paikars* reside mainly at Bheriaghât, a bazar in Cooch Behar on the border of Patgram in Bowrah, which is in this district, on the Teesta, south of Patgram, and at Debeegunge east of Boda.

6. The lands chosen for cultivation of tobacco are high lands with a rich loamy soil, in which there is a fair portion of sand—a description of soil common in the Dooars. Alluvial soil does not answer. High cultivation is carried out as follows:—

Prior to the rains a spot is selected for a seed-bed; this is well raised by the addition of fresh soil; it is well dug and then cow-dung, usually fresh, is put over it in proportion of 100 maunds to one beegha of land. Of course the seed-bed is a comparatively small plot, I mention the beegha merely to give a proportion. The seed-bed is then left to itself till the end of July and August, by which time the rains have caused the manure to become well saturated into the bed; in August the bed is dug up carefully and the soil powdered by hand. Old dried grass (thatching grass) is then placed over the bed and left till a few days prior to the sowing when the grass is fired, and the ashes are then worked into the surface soil with the hand. The surface soil is then carefully taken off the surface with the hand, and collected on one corner of the bed. The soil thus exposed is then worked up with the hand till it is well pulverized, and when in this state the seed is sown by throwing broadcast on the surface. The seed being thrown, a few handfuls are taken from the little heap of pulverized ashes and soil, and are lightly thrown over the seed in such quantity as to cover it completely but no more. This being done the surface of the bed is well pressed down by the feet of the cultivator and made quite level.

The seed is usually sown about 10 days before the last of Sawan, *i.e.*, the first two or three days of August, and it is considered that the earlier the plant is transplanted the better the crop. A chupper is prepared, and when rain comes on is put over the bed; at other times it is left open to the air and sun. If the night seem to threaten rain, the chupper is put up, not otherwise. The seed germinates in about a week, and the young plants first show above the soil in about 10 or 12 days. As I have above said it is considered well to transplant early, and if from any reason the sowing is late and it is desirable to expedite germination, this is done by sprinkling powdered cow-dung over the bed, and also by sprinkling on it water for two or three days, otherwise the seed is not watered. Till the plant is about two inches tall nothing at all is done to it; when it attains that height the grass that may have grown up with it is weeded out, and the plants, if they are growing too thick, are thinned. Now also if the soil appears hard, it is gently broken here and there with an iron spike, and a little dry

cow-dung scattered about it, and according to the vigor of the plants watering now commences; if the plant is very healthy and vigorous it is only watered once every second or third day, if sickly it is watered twice daily, water being sprinkled by hand. In this way the young plant is watched and tended till it is some seven or eight inches high and has five or six leaves. The actual height of the stalk at this time is much under seven inches, it is the upper leaves which gives the height to the plant.

By the time the plant has attained this growth it is ready for transplanting, which operation is performed in Kartic from the beginning to the end of the month, but the earlier the better (*i.e.*, from 15th October to 15th November).

The fields in which the young plants are to be sown have been selected before the rains. They are usually sown yearly in the same fields, the old soil being found best and not becoming exhausted owing to the constant renewal by manure. Ails or ridges are prepared round these fields before the rains, but the earth is not turned up. Manure is well scattered over it, at the lowest computation one small basket full to each coming plant, but when the cultivation is being thoroughly carried out, a great deal more is given, up to 100 maunds per beegha. The manure is dung—cow, buffalo, or goat-dung, and ashes, which are saved from the household cook-rooms. In this way the fields are left till Bhadro (the end of August), when the rains commence to dry up. All that is done to this in the meantime is additional manuring by constantly throwing into the field the daily accumulations of cow-dung and ashes from the cultivators' bharie. Thus left during the rains the fields are constantly flooded, and the manure gets well saturated into the soil; if the water escapes out of the field its productive power is lessened. In Bhadro the heavy rains being over, these fields are well ploughed and harrowed until the soil dries. They are ploughed at least twenty times. The usual plan is to plough them once in the morning leaving one side of the furrow to dry in the day's sun, in the evening the field is harrowed. The next day it is ploughed in the opposite direction so that another side of the furrow is exposed, and again the soil dries in the sun till evening, and is then again harrowed. This is constantly repeated till the soil is quite dry and well pulverized. All grass or rubbish is then carefully collected and either burnt, and the ashes ploughed and harrowed in, or else thrown over the ails while the ploughing and harrowing go on. It is customary to scatter pulverized oil-cake over the fields; this is done before the harrowing, some five maunds being given to one beegha. The field being now well prepared and the surface smoothed and pulverized, lines are marked on its surface. These are made by stretching two ropes parallel across the field, distant from each other  $1\frac{1}{2}$  to 2 hâths, *i.e.*,  $2\frac{1}{2}$  to 3 feet, and a man passing down the field traces a line with his foot by the side of the rope. Commencing at one end of the field the ropes are moved on always the same distance till the whole field is marked out in long parallel lines; the ropes are then placed across the field in the opposite direction and the same process gone through until the whole field is marked out in squares of  $2\frac{1}{2}$  to 3 feet. The seedlings are now transplanted (October and November). To do this the seed-bed is watered

by hand so as to loosen the soil, and the seedlings are then carefully pulled up by hand and carried in baskets to the fields. This is done in the afternoon when the great heat of the sun is over. A hole, a few inches deep, is made with an iron hoe at each of the angles of the squares above described, and in each hole a plant is put, the earth being well pressed down round the roots. For three days the plants are left to themselves. It is better for the plant that no rain should fall at this period. By the third day the lower leaves of the plant have dried and withered, but the shoot is fresh and healthy and fresh roots begin to be thrown. The field is now ploughed; one man drags and one guides the plough twice down between each two lines of plants, thus turning up two furrows between each two lines of plants. If this is done to-day from north to south the field will be left alone to-morrow, and on the third day the same operations will be performed from east to west. The field is again allowed to rest a day, and on the fifth day the same operation is performed diagonally across the squares between the plants, say from north-west to south-east. The sixth day nothing is done, and on the seventh the ploughing is repeated diagonally from north-east to south-west. By this manner the soil is well dried, and the leaves which have withered are now carefully picked off and thrown away, and the ploughed-up soil is smoothed and pulverized by hand, a little dried oil-cake being added to it. In doing this some very fine roots, which shoot from the trunk when it rises out of the soil, and which grow along the surface of the soil, are broken off; doing this is supposed to strengthen the plant, as those fine roots weaken the larger and top roots which are in the soil. Nothing more is now done to the plant till the end of Agrahan and early part of Pous, *i.e.*, December, when the plant is some two feet and more high, and now all leaves on the plant growing within 10 inches to one foot of the ground are picked off, of these there will only be some three or four to a plant; they are called *bispat* or poisonous leaves, and sometimes *goorpata* or root leaves, more often, however, the former. The only reason I have been able to discover for these leaves being called poisonous is that they are very bitter; the reason why they are broken off is, that the tobacco leaf is large and heavy and naturally falls backwarks, and if these lower leaves are left on the plant they droop back on to the earth and rot from contact with it. These leaves are (where cultivation is well carried out) dried and sold, in other places they are thrown away. As these *bispat* are picked, a little of the dry powder of the soil is thrown on the wound to stop the bleeding of the plant. After this, when the plant is now some 3 or 3½ feet high, and has from eight to ten good leaves, the top shoot is broken off by hand, and dry earth applied to the wound, the result of this is that the leaves grow larger; and a shoot, which rises at the base of each leaf is, as the leaves grow, also broken off and dry earth applied to the spot. This brings the plants up to Magh or end of January, and now those who go in for high cultivation commence to water the plants; water is obtained from wells dug for the purpose, or from holes near in which water has lodged. The mode of watering is to pour the water into the field and it finds its own way down between the ridges of the plants. The fields are thus flooded, this being done twice at distances of some

fifteen days is considered sufficient. During the whole of this time the plants are being carefully watched, and shoots, whenever they appear, are being broken off. The plants ripen in Chyet, April and May. The ripening is known by brown spots which appear on the leaves, these showing first on the leaves which face to the south. The ripe leaves on the south side of the plants are now cut from the stalk with a knife, the cutting being done upwards. They are cut in the early morn, and laid out on the ground by the side of the plant, and in the evening four or five or six leaves are tied together at the stalk with fine strips of bamboo fibre, and are then hung on ropes inside the cultivators' houses to dry. In this way the other leaves are cut as they ripen, the cutting going on daily till all the leaves are off the stalk; the cutting being done in the morning, and all the leaves lying during the day on the ground, and at the night being tied into bundles of four or six and hung up in houses to dry.

They remain hanging till Bysak or Joist (April—May) a period of about a "month," when they are taken off the ropes and sold, either at the cultivator's house to which the paikars go, or else at the hauts. Those who keep tobacco for their own use or who desire to get a better price, let the leaves hang till Assar (June).

The reason for the tobacco fetching a better price in June has less to do with its having hung longer than that by that time there is little of it in the markets.

The bare stalks are left standing till the cultivator has leisure to pull them up and throw them away, but they are also utilized by some who collect and burn them, and putting the ashes into a basket pour water on them; the water having percolated through the ashes is collected and used in washing clothes, it having the properties of a strong soap. After the leaves have been all cut, fresh shoots and leaves soon appear on the stalk, they are, however, small, and no second crop is gathered from them.

The finest plants in a field, some four or five in a beegah here and there, do not have the main shoot plucked; these plants are allowed to grow up for seed. The seed is ripe about the time the leaves of the other plants are cut; it is not, however, gathered till the leaf cutting is over. The mode of gathering is to cut off the seed-bearing top and folding it in cloth, rub it about till all the seed comes out of the pods. The lower leaves of these seed-plants are cut with the other plants. Much rain, in Falgoun, Chyet (February and March), and hailstorms are fatal to tobacco.

In cutting the leaf it is cut so close to the stalk that a portion of the stalk is cut away with it.

7. The only mode of curing is the hanging I have described. The leaves are hung close together on the inside of the roof of the cultivators' houses.

8. I am unable to give any reliable statistics as to the value of exports. I have been given a rough estimate of total export at 30,000 maunds, value Rs. 1,80,000, and I do not think this can be over, if anything, it is under the mark. There is no manufacture of tobacco in the district, it is simply dried and sold for export. It is packed in bundles of one maund and more, tied with rope and surrounded with grass. The mahajun who purchases from the paikars send down the

tobacco by water *viâ* the Teesta and Brahmapootra to Calcutta and Serajgunge; Mugs from Chittagong come up to Baurah in their own boats and buy tobacco.

9. I know of no proper experiments made with exotic seeds in this district. Colonel Haughton, I am informed, once planted some in his garden and it failed, the reason assigned being, that it was not sufficiently manured and tended.

10. I cannot hear of any disease known as special to the tobacco plant; it seems a very healthy plant, and if attacked by insects, it is owing to use of fresh cow-dung at a wrong period, *i.e.*, shortly before the plant is sown.

11. Tobacco grown in these parts, especially in the Dooars, is very fine, and when the amount of land available for its cultivation in the Dooars is remembered, it will be understood that the tobacco trade is susceptible of being very largely opened up in this district. More favorable places than could be chosen in the Dooars could hardly be selected anywhere for the establishment of a cigar manufactory. A proof that the tobacco of these parts is appreciated in the market is, that it mostly gets into Burmah under the name of Rungpore tobacco, and is there manufactured and comes back to Calcutta as the best Burmese cigars. Water carriage from this district to Calcutta is easily and cheaply got by the Teesta and Brahmapootra. The opening of the contemplated railway in this district will greatly increase the value of these local crops.

---

## DACCA DIVISION.

No. 377A, dated Dacca, the 29th July 1873.

From—A. ABERCROMBIE, Esq., Officiating Commissioner of Dacca,

To—The Secretary to the Government of Bengal.

WITH reference to your circular letters Nos. 11 and 22, dated 3rd April and 13th May last, respectively, I have the honor to furnish the following information in connection with the cultivation of tobacco:—

(1). *Chief localities of cultivation, with particulars of climate.*

1. Tobacco is cultivated in all the districts of this division to a very limited extent. It is chiefly grown for home consumption in most of the districts. There are no large fields of tobacco, and it is very seldom raised for sale. In Dacca, Backergunge, and Mymensingh, mild temperature is stated to be suited to the cultivation of tobacco; but in Sylhet the Collector reports the dry weather is well adapted to it, and that it never grows during the rainy season, which proves injurious to its growth.

(2). *Approximate number of acres under cultivation during each of the last five years.*

2. The Collector of Backergunge thinks the number of acres under cultivation is not more than 100. The Collector of Mymensingh puts the area at 5,000 acres for the entire district, and the Collector of Sylhet says 80 acres. The Collectors of Dacca and Fureedpore think it impossible to give an approximate number of acres cultivated, and the Deputy Commissioner reports that the cultivation of tobacco is insignificant, and that he is unable to give an approximate number of acres.

(3). *Average quantity produced per acre.*

3. In Dacca, about 6 or 7 maunds per acre.

In Fureedpore, about 24 maunds per acre.

In Backergunge, about 7 or 8 maunds per acre.

In Mymensingh, about 5 maunds per acre.

In Sylhet, about 30 seers to 1 maund per acre.

The Deputy Commissioner of Cachar does not answer this question.

From the above it will be seen that the average quantity in Fureedpore is too high.

(4). *Cost of cultivation per acre.*

4. The Collector of Dacca estimates about Rs. 15 or Rs. 16 per acre.

The Collector of Fureedpore estimates about Rs. 25 or Rs. 30 per acre.

The Collector of Backergunge estimates about Rs. 15 per acre.

The Collector of Mymensingh estimates about Rs. 10 to 14 per acre.

The Collector of Sylhet estimates about Re. 1-8 per acre for those who cultivate themselves.

The Deputy Commissioner does not give information on this point also.

(5). *Quality and price of crop in different localities.*

5. The tobacco grown in all the districts of this division is of very inferior quality. The Collectors find it difficult to quote a price for it, as it is only used for home consumption. The Collector of Backergunge estimates the value at Rs. 30 per acre, and the Collector of Mymensingh at Rs. 5 to Rs 6 per maund. In Dacca the price is estimated at Rs. 7 to Rs. 5. The Collector of Sylhet reports that the price of the crop may be from Rs. 2 to Rs. 2-8 per maund if sold. In Fureedpore and Cachar the quality of the tobacco grown is inferior; the price of the crop is not stated.

(6). *Methods of cultivation adopted. Is high or low or alluvial land preferred? Is irrigation practised? What is the kind of manure generally used? Is the seed sown broadcast in the fields or in seed-beds? What are the seasons for sowing, transplanting, and cutting the crop? Are the stems cut down, or are the plants allowed to stand, the leaves being plucked singly? If the latter, is a second crop ever taken?*

6. The ground is prepared in the month of Assin or Kartic (September or November) for the tobacco crop. The land selected is almost invariably the high land adjoining the ryot's dwelling house. A nursery is first prepared in which the seed is sown broadcast, and the young plants are transplanted about a month afterwards. The land is thoroughly ploughed for several days, then manured with cow-dung, and then ploughed again to mix the manure with the soil. The transplantation from the nursery takes place about the end of Augrahan (November); the young plants are planted in straight rows, rather wide apart: about 1,200 plants will be put upon an acre. Irrigation is not practised, but the young plants are watered for a few days after transplantation, and are protected from sun by a screen of plantain bark, which is taken off in the evening. The young plants are about 4 inches high when transplanted; when they have reached a height of 10 or 12 inches, the leaves at the bottom are picked off and thrown away. This increases the size of the upper leaves. When the plants are about 2 feet high, new shoots appear underneath each leaf, and these shoots, together with the tops of the plants, are removed, and the process is repeated as often as the shoots re-appear. The leaves are ready for cutting early in February. The general practice is to cut down the stem, and leave the plant lying in the field for a day and a night, after which the plant is washed and put in the sun: this is supposed to improve the colour of the leaf; after this each leaf is singly plucked from the stem, which is thrown away. No second crop is taken. The method of cultivation is almost the same in every district.

(7). *Method of curing adopted.*

7. The leaves are cured by suspending them over a rope in one of the houses of the *baree*, generally in the cow-house. When they

are considered to be properly dried, 8 or 10 leaves are made up into a bundle, and then several of these bundles are tied together into a bale weighing perhaps 25 or 30 seers. A few plants are allowed to stand in the field for seed, the leaves being picked without cutting the stem.

The method of curing adopted is also almost the same in every district.

(8). *Quality of tobacco exported; shape in which exported—raw or manufactured; and value of exports.*

8. Tobacco is not exported from any districts of this division.

(9). *Results of notable experiments made with exotic seed.*

9. In August 1869 a small quantity of Virginia tobacco seed was received for experimental cultivation from the Cotton Commissioner. The experiment made by the Collectors of Dacca, Backergunge, and Mymensingh was an utter failure, as the seed did not germinate. The Civil Surgeon of Dacca made two experiments at the Lunatic Asylum, of which the first proved successful and the second one an utter failure. The Civil Surgeon of Fureedpore made the experiment in the jail. The tobacco that was grown there was found to be very mild, similar to the tobacco grown in the district.

Mr. G. M. Reily, of Muddendary factory, in the district of Fureedpore, also made an experiment, and had half a maund of the leaf, the quality of which was not very much better than the country tobacco.

This was reported to Government in detail in my letter No. 416, dated 24th August 1872.

2. Mymensingh is the only district in this division which is suited to the cultivation of tobacco, as it enjoys the same climate as Rungpore, where tobacco is grown in abundance.

3. The Collector of Mymensingh reports that the soil and climate of his district are extremely well adapted to tobacco; all that is wanted is good seed and an improved mode of curing. So long as the ryots never attempt to get fresh or superior seed, but go on using the savings of last year's crop, it is to be expected that the produce will gradually deteriorate.

4. There are no officers in this division who have devoted much attention to the subject of cultivation, nor is there any useful information on record.



## CHITTAGONG DIVISION.

No. —, dated Calcutta, the 11th August 1873.

From—H. HANKEY, Esq., Officiating Commissioner of the Chittagong Division,  
To—The Secretary to the Government of Bengal, Agricultural Department.

WITH reference to the Government circular No. 11, dated 3rd April last, I have the honor to report as follows on the subject of the cultivation of tobacco in the Chittagong division.

2. The Magistrate of Chittagong reports that tobacco is cultivated for local consumption more or less all over the district, but cannot be considered to form a staple or even a very usual crop; that but by far the greater part of the crop is grown by the Mughls in the southern part of the district; and the extent of land under tobacco is given approximately at from 2,000 to 2,500 acres; of this at least three-quarters is said to be in the Cox's Bazar sub-division. In the district of Tipperah the average cultivation of tobacco is said not to exceed 100 acres. Tobacco is not cultivated in the district of Noakholly.

3. The average quantity produced per acre is estimated to be 8 maunds in Tipperah, and from 12 to 13 maunds in Chittagong; and the cost of cultivation, Rs. 8 per acre in the former district, and from Rs. 15 to Rs. 20 per acre in the latter district, according to facilities for irrigation and the amount of manure employed.

4. The Magistrate of Tipperah says that the quality of tobacco grown in his district is excessively bad, and that only the very lowest classes manufacture it for their own smoking, and it is unendurable by those who can afford to purchase the imported article. The Magistrate of Chittagong reports that there are two distinct qualities of tobacco known in his district, viz., *fassia*, the ordinary sort; and *coffee*, a superior description used only for chewing with betel. Of these, the demand for *fassia* is naturally a good deal the greater, *coffee* being grown to a very limited extent, for the most part in Chokorea thana in the south-west. *Fassia* sells for Rs. 5 to Rs. 7-8 per maund as a rule, and *coffee* is usually an anna a seer dearer. These are the average prices in ordinary times, but of course they are subject to variation.

5. The method of cultivation has been thus described by the Magistrate of Chittagong: "High and chur land is generally preferred, and irrigation is generally practised—first, when the young plants are coming up, and again in from twenty to twenty-five days afterwards. It is usual to discontinue it when the plants are three parts grown and the roots have taken firm hold. Cow-dung, the older the better, is used as manure. The seed is grown in seed-beds, but broadcast, in the early part of November, the beds being then lightly strewn with leaves of trees to protect the young shoots from the sun. The practice varies as to transplanting, but where adopted

it is done in the early part of December. The plants are not cut until after the leaves have been plucked from March up to about the middle of April. If the soil permit, a second or even a third crop is taken, and the stems are then cut down.

6. In the district of Tipperah the cultivation appears to be made on lands bordering on small rivers, khalls, and tanks adjacent to the homesteads of cultivators. The seeds are sown in seed-beds and then transplanted to the land ploughed and prepared for the purpose. Before transplanting the land is simply ploughed. A little quantity of cow-dung is the only manure used previous to ploughing. The seeds are sown in the latter part of October and transplantation made in November. The crop is cut in February.

7. Strictly speaking, curing is not known. The leaves are dried in the sun and slightly pressed—nothing more. The result of course is that the tobacco is of a very poor flavor.

8. There is no export trade; the quantity grown is locally consumed. No experiments with exotic seed have come to notice.

9. The report from the Hill Tracts has not been received up to date.

---

No. 413, dated Camp Comillah, the 10th October 1873.

From—F. C. FOWLE, Esq., Officiating Commissioner of the Chittagong Division,  
To—The Secretary to the Government of Bengal, Agricultural Department.

IN continuation of my predecessor's letter No. 314, dated the 11th August 1873, reporting on the culture of tobacco, I have the honor to forward herewith a copy of the Deputy Commissioner's report, No. 856, dated the 1st instant. I have nothing to add to this report, which is complete and interesting.

---

No. 856, dated Rungamatee, the 1st October 1873.

From—Captain T. H. LEWIN, Deputy Commissioner, Chittagong Hill Tracts,  
To—The Commissioner of the Chittagong Division.

REFERRING to your Memo. No. 76, dated the 1st May 1873, which gave cover to Circular No. 11, dated the 3rd April 1873, of the Government of Bengal, in the Agricultural Department, I have the honor to submit the report called for on the cultivation of tobacco in the Chittagong Hill Tracts.

2. I must apologise for the delay which has transpired in submitting the report in question; it has been caused chiefly by my desire to collect information on the subject from all available sources, in order that the report submitted might be as complete as possible.

3. I have found it difficult, if not impracticable, to obtain the statistical information required, owing to the scattered locations of culture and the incidental mode in which it is carried on. It is therefore only in questions of fact that my report will be reliable; figures may be regarded as approximatory only.

4. *Tobacco culture—Locality.*—The cultivation of tobacco is in this district entirely confined to the banks of streams and rivers near which the villages of the different tribes are situated. Each community raises tobacco for home consumption, and it is only such amount of the plant as is in excess of their own requirements which is sold, and finds its way into the markets of Chittagong.

5. *Climate.*—The river valleys of this district, in which are found the places most suitable for tobacco-growing, present no great peculiarities of climate; the variations of temperature, prevailing winds, &c., are much the same as in Tipperah, Sylhet, or Cachar. One noticeable feature, however, exists, arising from our position near the sea, viz., the nights are always cool, with a breeze from south and south-west.

6. *Acreage.*—The amount of cultivation during the last five years has not, I believe, varied in any notable degree simply from the reason above stated, that each family raises sufficient for its own wants, and that, enough being reserved for home consumption, the surplus only is sold for what it will fetch to the beparees, bamboo-cutters, or other inhabitants of the plains who may, from time to time, visit the isolated hill villages.

7. I should estimate the number of acres under cultivation as follows:—

	Population.	Acres.
The Kurnafoolee river ...	3,279	9

*Head-quarters Sub-division.—Its affluents.*

Ryn Kheoung ...	2,090	6
Subolong ...	1,714	5
Kassalong ...	2,506	7
Kaptae ...	1,390	4
Chingree ...	11,183	33
Smaller streams ...	9,214	27
The Fenny river ...	5,940	17
Smaller affluent streams ...	2,527	7

*Sungu Sub-division.*

The Sungu river ...	1,339	4
Its affluents ...	8,116	24
Matamoree river ...	4,034	12
Its affluents ...	3,777	11

*Cox's Bazar, Hill Tracts Sub-division.*

Bagkhallee ...	1,844	5
Small hill streams ...	2,100	6

Total	61,058	177
-------	--------	-----

8. *Produce.*—The average quantity produced per acre is about 490 seers; each plant produces on an average 8 leaves fit for consumption; in one acre there are about 10,890 plants, and 176 leaves go to the seer.

9. *Cost of culture.*—The cost of cultivation can hardly be ascertained, as the hill people employ no hired labor. The heavy work of culture is performed by the men, and the lighter duties by the women and children of each family. Taking the ordinary price of local labor

at the prevailing rates (5 annas per day), the average cost per acre may be estimated at Rs. 8.

10. The quality and price of the tobacco produced in different parts of the district vary considerably. In the head-quarters sub-division the quality is not very good, and the rate of selling varies from 2 to 3 annas a seer, according to demand and supply. There is only one variety of seed known and cultivated here, and the quality of the produce naturally varies from different external causes, as selection of ground, care of culture, &c.

11. *Varieties.*—In the Sungu sub-division there are three qualities of tobacco recognized. The first and best sort is the Khoa-Doung, so called from the name of the valley on the Matamoree river, where alone it is found. The word “Khoa-Doung” is Burmese, and signifies “pigeon’s wing” (*khoa*, a pigeon, and *toung* or *doung*, a wing); it is the name of a certain species of rock which is found on the Matamoree, as to which the belief prevails that where this rock protrudes from the earth on one bank of the river, the opposite shore will afford the best soil for the culture of tobacco.

12. The excellence of this particular sort of tobacco may be fairly attributed to speciality of soil rather than to any peculiar mode or extra care in culture. This belief is greatly strengthened by the fact that the seed of this variety of tobacco, when sown elsewhere, only produces an ordinary crop.

13. The second quality of tobacco in the Sungu sub-division is known as Mri-Kheoung, or Matamoree tobacco, “Mri-Kheoung” being the Burmese name for the Matamoree river. This quality is the ordinary sort grown throughout the whole valley.

14. The third quality is the Rigre-Kheoung, or Sungu river tobacco. This description is raised entirely in the Sungu valley.

15. The prices of these three sorts of tobacco are as follows:—

1st.—Khoa-Doung, 9 annas per seer, Rs. 22-8 per maund.

2nd.—Mri-Kheoung, 8 annas per seer, Rs. 20 per maund.

3rd.—Rigre-Kheoung, 6 annas per seer, Rs. 15 per maund.

16. There is also a dwarf variety of tobacco met with in the Sungu sub-division. It is, however, of very inferior quality, possessing only the advantage of being very hardy and susceptible of cultivation in places where the better sorts would not thrive.

17. This dwarf tobacco and the rejected leaves of the second and third qualities above-mentioned, are sold to the poorer classes at about 3 annas a seer.

18. *Consumption.*—Tobacco is universally and largely consumed by all the hill tribes; they smoke it as cheroots and also in pipes; they chew the leaf or eat it as an adjunct to “pân,” of which latter they are inordinately fond. Tobacco water is also bottled and used as an astringent, and preservative for the teeth and gums.

19. *Method of culture.*—There is but one method of tobacco cultivation which is common to the whole district. It is rude and primitive, but apparently answers the purpose of producing good tobacco, as the best variety of Mri-Kheoung or Matamoree tobacco is of peculiarly delicate flavour, certainly not inferior to good Manilla produce.

20. *Preparation : sowing.*—The mode of culture is as follows. A spot of land is selected on the river bank about a month after the rivers have fallen, subsequent to the rains (in November or latter part of October). By preference, the ground should be alluvial, that is, it should have been submerged by the high water in the rains, and have been exposed to light and air long enough for a good crop of jungle grass and weeds to spring up before cultivation begins. The undergrowth is cleared, collected in heaps, and burnt; the ashes thus obtained form the sole fertilizer used by the cultivators. The soil should be light and friable; it is not prepared or broken up in any way for the reception of the seed, which is simply scattered broadcast over the ground. A space equal in extent to one-half of the actual cultivation is thus sown and the spot left to itself.

21. *Transplanting.*—In about five to six weeks' time the seed, having germinated, springs up, and the young crop having reached a height of some 4 inches, the transplanting is commenced; the strongest half of the plants are removed and planted at distances of about a foot apart in the remaining half of the land. The transplanting is performed, if possible, in the evening, so that the plants may have the benefit of the night dew and cool temperature.

22. After the transplanting is finished, the plot will be roughly fenced in with slips of bamboo, and the crop be watched and tended; the ground is kept clear of weeds; grubs and caterpillars are destroyed, and the plants watered.

23. For about a week after transplanting, water is given twice a day, in the morning and evening; after that it is only occasionally administered, as the appearance of the plants seem to indicate.

24. It is stated that the transplanted tobacco yields a finer quality than the undisturbed seedlings. I am unable to offer any explanation of this peculiarity, if indeed it exists.

25. In about two months after the plants are well rooted, the terminal or top shoot of the plant is nipped off to prevent its further upward growth, the plant being kept down by this process to about half its normal height.

26. *Harvest.*—The collection of the crop begins about the month of March, and continues until April; the plants are not cut down until the whole crop is gathered; they are allowed to remain standing, the weaker or redundant leaves being plucked off from time to time.

27. If left to itself, the plant would throw out some 50 to 60 leaves, but these would be of low quality and flavour. The leaves plucked from time to time are thought very inferior, and in many instances are thrown away; it is the last six to eight leaves remaining on the plant which are of superior quality, and which are specially gathered and stored.

28. About three to three-and-a-half months after planting the crop approaches maturity; this is indicated by the appearance of the leaves, which become of a reddish colour, and small red spots break out here and there upon their surface. The thickness, brittleness, &c., of the leaf are also signs of maturity.

29. *Gathering.*—In gathering the crop, the leaves are not usually removed from the stalk; but, when practicable, the stalk is cut into

small pieces upon each of which remains two leaves of tobacco : this arrangement is favored by the growth of the plant, the leaves being generally in pairs, one on each side of the stem.

30. The pairs of leaves are arranged in a thin layer along a slip of bamboo, upon which is superposed another slip, confining as with a clamp the small piece of stalk left to each pair ; each layer would be only two leaves thick, and about 6 to 8 feet long.

31. *Drying*.—The leaves finally are hung up in rows of layers inside the house of the owner, and here they are allowed to remain. The rows are not too close together, and the tobacco has every advantage of dryness and ventilation.

32. This drying process lasts for about a month or five weeks, in which period the leaf grows fit for packing ; the length of this period, however, naturally depends much upon the state of the atmosphere, as the fall of rain or any excessive moisture of the air would retard the process.

33. *Packing*.—The leaves are then taken down and cleared from dust and dirt ; they are packed afresh in rows between bamboo clamps as before. Each row or “kime,” as it is called, is about 18 inches long, and contains something over a quarter of a seer of tobacco ; 10 kimes are considered equal to 3 seers.

34. The leaves packed thus in kimes are stowed in baskets, and either kept for consumption, or sold, as inclination or need may dictate.

35. *Exportation*.—I am unable to state with any confidence the amount of tobacco annually exported from this district ; approximately the trade is as follows :—

					Maunds.
Matamoree	...	...	...	...	80
Sungu	...	...	...	...	50
Head-quarters sub-division	...	...	...	...	50
Fenny	...	...	...	...	15
					—
					195
					—

36. The greater part of the Matamoree exports finds its way *viâ* Cox’s Bazar to Akyab, where it is manufactured into cheroots for the local market.

37. *Trade Statistics*.—Measures have been taken to obtain for the future accurate statistics of trade in this district, and detailed information on the point will hereafter be submitted.

38.—*Foreign varieties : acclimatization experiments*.—Two attempts to introduce exotic varieties of tobacco into this district have been made, but in both cases were unsuccessful.

39. The first occasion was in 1869, when some Virginia tobacco seed was obtained and distributed among tobacco-growers in the district ; none of this seed germinated.

40. Again, in 1871, some Virginia tobacco seed was furnished to us by the Government of Bengal. This also, in like manner, was distributed among some of the most influential of our hill chiefs, but the results reported were not satisfactory. Some portion of the seed germinated, but the plants were unhealthy ; and, whether the result be attributable to lack of care or unsuitability of climate, the result was unmistakeably a failure.

41. *Advantages of indigenous variety.*—It seems to me, however, that with such an excellent indigenous stock of our own, as is found in the “Khoa-Doung” variety of the Matamoree valley tobacco, that more good could be done by fostering and improving local cultivation, than by attempting to introduce other and new varieties of the tobacco plant.

42. I much fear, however, that it will be found difficult to introduce any changes as to culture among our hill folk; indeed, speaking from an unskilled and unscientific point of view, the method of culture pursued in these hills appears to me thoroughly efficient.

43. There is no doubt but that, under proper supervision, the area of cultivation might be largely increased, and I should welcome gladly any signs of European enterprise taking the direction of the fertile Matamoree valley.

44. This end, I am sorry to say, cannot be hoped for until the issue of the new Waste Land Rules, as under the *ad interim* arrangements, it is practically impossible for European settlers to obtain land on terms which they consider satisfactory.

---



## BEHAR DIVISION.

No. 86R, dated Bankipore, the 8th September, 1873.

From—S. C. BAYLEY, Esq., Offg. Commissioner of Patna,

To—The Secretary to the Government of Bengal.

IN Government circular No. 11, dated 3rd April 1873, and No. 22 dated 13th May 1873, to which I have now the honor to reply, information was called for on the following points in connection with the cultivation of tobacco in this division:—

1st.—Chief localities of cultivation, with particulars of climate.

2nd.—Approximate number of acres under cultivation during each of the last five years.

3rd.—Average quantity produced per acre.

4th.—Cost of cultivation per acre.

5th.—Quality and price of crop in different localities.

6th.—Methods of cultivation adopted. Is high, or low, or alluvial land preferred? Is irrigation practised? What is the kind of manure generally used? Is the seed sown broadcast in the fields or in seed-beds? What are the seasons of sowing, transplanting, and cutting the crop? Are the stems cut down, or are the plants allowed to stand, the leaves being plucked singly? If the latter, is a second crop ever taken?

7th.—Method of curing adopted.

8th.—Quality of tobacco exported; shape in which exported—raw or manufactured; and value of exports.

9th.—Results of notable experiments made with exotic seed.

10th.—Opinions of such officers or other persons as have devoted their attention to the subject, and all useful information available and on record.

11th.—In the case of districts which export tobacco, the localities to which export is made.

2. The collectors have now replied to my questions, and the following answers are summarised from their reports:—

1st.—It is in the Tajpore sub-division of the Tirhoot district that the most extensive cultivation is carried on, and the best tobacco is produced. In Gya, it is not cultivated at all, and in the rest of the districts, it is cultivated in very small quantities, generally for local consumption. A not very dry climate seems to be most favorable to its growth.

2nd.—The approximate number of acres under cultivation in the several districts are as follows:—

Patna	...	...	...	...	400	acres.
Shahabad, upwards of	...	...	...	...	250	"
Tirhoot	...	...	...	...	40,765	"
Sarun	...	...	...	...	500	"
Chumparun	...	...	...	...	130	"

3rd.—There is a great variation in the several reports as regards information on this point, and there are two sources of error to be considered—first, whether the crop referred to is the green tobacco or the dried product, and secondly, the everlasting uncertainty about local beegahs. Altogether, I cannot attach much value to the following figures. The average produce per acre is said to be—

In Patna	...	...	3 to 6 maunds	varying according to the quality of the soil.	
Shahabad	...	{ Buxar	...	8 to 10	Ditto ditto.
		{ Sasseram	...	17½	Ditto ditto.
		{ Bhubhooa	...	4½	Ditto ditto.
Tirhoot	...	{ Tajpore	...	19 to 24	Ditto ditto.
		{ Seetamarhi	...	10	Ditto ditto.
		{ Durbhungah	...	10½	Ditto ditto.
Sarun	...	Sudder	...	16 to 19	Ditto ditto.
Chumparun	...	...	...	10 to 12	Ditto ditto.
				2	Ditto ditto.

4th.—The cost of cultivation per acre is given below, as abstracted from the collectors' reports, but this also has to be received with hesitation. In some cases the collectors appear to have included rent, and in others to exclude it. The real cost, moreover, when tobacco is grown on very small patches close to the village, where it receives gratuitous manure and is prepared by the cultivator's family, cannot be estimated with any accuracy; it is said to be—

				Rs.	A.	P.
In Patna	...	...	...	9	8	0
Shahabad	...	{ Buxar	...	16	0	0
		{ Sasseram	...	24	0	0
		Sarun	...	Rs. 6 to	7	0 0
		Chumparun	...	„ 3 to	4	0 0
Tirhoot	...	{ Seetamarhi	...	„ 4 to	6	0 0
		{ Tajpore	...	...	32	0 0
		{ Durbhungah	...	...	10	0 0 (inclusive of rent.)
		Sudder sub-division	...	...	15	0 0

I had at first imagined from the excessive variation in the average produce that the collectors had adopted different modes of calculation; but it will be observed that the outturn varies almost exactly in proportion to the cost of cultivation; and we may assume that in Tajpore, where the best land is taken up and rented at Rs. 12 or Rs. 15, manured and thoroughly cultivated, an expenditure of Rs. 32 per acre is rewarded by an outturn of 24 maunds; whereas, in Chumparun, an expenditure of Rs. 4 similarly produces a worthless crop of two maunds.

5. In Patna there are three kinds of tobacco.

First quality is known as *morlum*, having long, narrow leaves; it is chiefly grown in the place called Dhanawan, and only to a small extent; it fetches from Rs. 7 to Rs. 8 per maund.

Second quality is known as *dangi*, having very broad and coarse leaves; it fetches from Rs. 5 to Rs. 6 per maund.

Third quality is known as *tauji*, having leaves neither so long as the first nor so broad as the second; it is inferior to both in quality, and fetches about Rs. 4 per maund. In Shahabad the tobacco is of a coarse kind, and is sold at about Rs. 4 per maund. The price of tobacco in Tirhoot varies from Rs. 4 to Rs. 5 per maund. Pergunnah Sareysa,

in the Tajpore sub-division, is famous for the good quality of the tobacco plant. In Seetamarhi the quality of the crop is said to be inferior to that grown in other parts of the district.

In Sarun two kinds of tobacco are grown, of which one has leaves which are short and very broad. This species is much stronger than the other kind called "Sagoah," of which the leaves are about 18 inches long and four or five inches broad. This quality of tobacco, Mr. Drummond says, is very inferior, and it is sold from 1 maund 15 seers to 1 maund 20 seers, "pucka," per rupee.

The Collector of Chumparun has not given any definite information on this point, but simply states that the quality and price of tobacco in different localities of his district are nearly the same.

6. High or old alluvial land is considered most suitable for the crop, but generally *dih*, or high lands near villages, are preferred. The soil should not be too light; sand is considered bad; a slight admixture of clay is thought good. The following is an account of the cultivation in the Tajpore district, which applies to the others, except that the cultivation is elsewhere less careful. The land lies fallow from the clearing of the *rubbi* crop, and from that time up to September is under constant preparation. The land (except in Sarun, where no manure is used, the soil on which tobacco is grown being always very rich) is manured with ashes, cow-dung, sheep-dung, or straw. The seed is sown in beds in September, and in about a month when the plants have grown to from three to four inches high, they are transplanted in fields regularly ploughed and prepared for the purpose. The plants are placed at a distance of from one to one-and-a-half cubits apart, and watered at the time of transplanting. The reports as to irrigation vary considerably. In Tirhoot, Mr. Wace says, it is only irrigated at the time of its being transplanted, and not afterwards except in certain places; and Mr. Mangle says the same of Patna; but the Magistrates, both of Sarun and Shahabad, speak of it as an irrigated crop. It apparently depends on the class of land selected. In the "bhaugor" lands in Sarun, irrigation has to be carried on till the plants are ripe for cutting; but in "kouch" lands the plants are not irrigated after they have taken root; the earth round them has to be turned up occasionally, and the field has to be regularly weeded. Among the items of expenses incurred in the cultivation of the plant that of weeding is the heaviest, an acre of land requiring at least four men for weeding only. "This is one reason" (the land, says Mr. Wace, is constantly weeded and pulverized every three or four days) says Mr. Collector Mangles, "why it is cultivated by well-to-do persons only, or by people having large families, so as to be sure of ample labor. The weeding is rendered imperative owing to a peculiar little parasite plant which appears in tobacco fields, known as 'Athangra,' which destroys the tobacco plants if not speedily removed." When the plant has got to the proper height (say 1 to 1½ feet) the top is broken off, and a little skewer is inserted at the fracture and pushed a little way down. This is done to dwarf the plant and to prevent it throwing out more shoots. The leaves then on the stem, from six to nine, make the crop; no new ones are allowed to sprout; and any attempts of the plant to waste its energies either in sucklings from

below the ground or shoots from above, are promptly suppressed. The seed is sown in September, the seedlings are transplanted in October, and the leaves are cut in January, February, March, and April in different districts. The stems are generally cut down; but in some instances leaves are plucked simply, in which case a second and even a third crop is taken a month or two after the first cutting. The subsequent harvest is of very poor quality.

7. There are two modes of curing according as the tobacco is prepared for eating (chewing) or smoking purposes. Tobacco for eating is prepared in the following way. The plants are allowed to be on the ground as cut for a day or two. They are then carried to some grassy spot and laid out to catch the sun during the day and the dew at night, being turned daily. After this has gone on for eight or ten days, every third or fourth day the plants are stacked together till they get heated when they are again spread out to cool. If at this time the dew is thought not sufficient to cool the plant, at evening-time a little water is scattered over the leaves as they lie. This goes on for 20 days or more. The plants are then brought in to cover and stacked. They are changed every third or fourth day, the top going to the bottom, and so on. It is important now to prevent them getting over-heated. If the leaves show a tendency to get crisp, the heaps are covered with plantain leaves or damp grass, over which is put a blanket to make the heap sweat. The leaves are then separated by a *khurpee* or *huswa* from the stem, a little of this being artfully cut off with them to make weight. They are then tied five or six together with strips of date leaves and piled together. These piles are again watched carefully till it is evident that the leaves will not heat any more. They are tied up in bundles of four maunds each, wrapped round with straw, and are then fit for the market.

In preparing tobacco for the purpose of smoking, the leaves are put into a vessel with "goor," or molasses, in the proportion of a maund to 30 seers of "goor," and boiled for four or five hours; the whole being amalgamated in this way, is turned out to cool and dry on the ground, which had been made smooth and clean for the purpose; and when dry it is ready for use and is broken up as required.

8. No tobacco is exported from Shahabad, Sarun, and Chumparun. About 3,000 maunds of manufactured tobacco, valued at Rs. 30,000, are annually exported from Patna to the eastern districts. Raw tobacco, of which the greater portion comes from Tirhoot, is also exported from this district to all the principal stations in the North-Western Provinces and Oudh.

The Collector of Tirhoot has not given any accurate account as to the quantity or value of exports. The only part of his district whence a considerable quantity is exported is the Tajpore sub-division. Some of the ryots of this place export it in carts to Nepal, others take it to Hajepore, and there dispose of it, while a considerable quantity is taken in the same way to a mart named Islampore in the Behar sub-division. Many thousand maunds are bought up by the travelling merchants and transported by river and rail to the Upper Provinces and Bengal.

9. No experiments with exotic seeds appear to have been made in Patna, Shahabad, and Chumparun. In Tirhoot and Sarun, however, experiments have been made with Havanna and Virginia tobacco. In some places the results were far from satisfactory, but in others there was a partial success. The tobacco produced was of superior quality and of a stronger flavor than the common "desi" tobacco.

10. No information on this point has been given by any of the collectors. Messrs. Halliday and Drummond's reports contain some accounts of experiments made by private individuals, but they give no "opinion" on the subject, as called for by Government.

11. The particulars are given in No. 8.

No. 250, dated Bankipore, the 19th August 1873.

From—A. C. MANGLES, Esq., Collector of Patna,

To—The Commissioner of the Patna Division.

WITH reference to your Circular Memorandums Nos. 31R and 55R, dated 1st and 23rd May last respectively, I have the honor to submit the following report:—

*Chief localities of cultivation and particulars of Climate.*

1. Tobacco is cultivated to a very small extent generally throughout the district by the well-to-do ryots for private consumption. It is cultivated for the market at the following places in the Barh subdivision, but in small quantities only:—

Sobniawan.	Rani Serai.
Bukhtiarpore.	Dhanawan.
Rawaitch.	Jathli.
Mokameh.	Futwah.
Mohammudpore.	

The climate of these places is hot and dry, except in the rainy season.

*Approximate number of acres under cultivation during each of the last five years.*

2. Some 400 acres of land are estimated to have been under cultivation during each of the last five years.

*Average quantity produced per acre.*

3. The average yield per acre is from three to six maunds, varying according to the quality of soil.

*Cost of cultivation per acre.*

4. The average cost of cultivation per acre is as follows:—

				Rs.	A.	P.
Rent of land	...	...	...	9	0	0
Value of seed ( $\frac{1}{4}$ seer)	...	...	...	0	8	0
Ploughing, weeding, &c.	...	...	...	9	0	0
			Total	...	18	8 0

*Quality and price of crop.*

5. There are three kinds of tobacco grown in this district.

First quality is known as *morlum*, having long, narrow leaves. It is chiefly grown in the place called Dhanawan, and only to a small extent. It fetches from Rs. 7 to Rs. 8 per maund.

Second quality is known as *danji*, having very broad and coarse leaves. It fetches from Rs. 5 to Rs. 6 per maund.

Third quality is known as *tauji*, having leaves neither so long as the first nor so broad as the second. It is inferior to both in quality, and fetches about Rs. 4 per maund.

*Method of cultivation.*

6. The method of cultivation adopted in this district is as follows:—

High or old alluvial land is considered most suitable for the crop, but generally *dih* or high lands near villages are preferred. The land is manured with ashes or cow-dung during the rains, and the seed is sown in nurseries about the beginning of Assin, or the middle of September; and in about a month, when the plants have grown to from 3 to 4 inches high, they are transplanted in fields regularly and properly ploughed. The plants are placed at a distance of from one to one-and-a-half cubits apart. Each plant is watered by hand at the time of transplanting, but not afterwards, irrigation not being ordinarily practised in this district. The field is regularly weeded until the plants reach maturity, which takes place about Pous, or December. Among the items of expenses incurred in the cultivation of the plant, that of weeding is the largest, an acre of land requiring at least four men for weeding alone. This is one reason why it is cultivated by well-to-do persons only, or by people having large families, so as to be sure of ample labor. The weeding is rendered imperative, owing to a peculiar little parasite plant, which appears in tobacco fields, known as “Athangra,” which destroys the tobacco plants if not speedily removed.

The crop is cut about the month of Magh, or January. At the first cutting, known as *morlum*, only the leaves are cut off, the stems being allowed to stand. Second crop, called *danji*, is taken in Falgoon or February, and a third crop, called *tauji*, in Cheyt, or March.

*Method of curing.*

7. There is only one method of curing adopted in this district, which is as follows:—The leaves, after being cut, are strewn over the field for the night so as to allow the dew to fall on them, and in the morning they are collected and placed in heaps in the shade, to be again strewn over the open field in the evening. This process is carried on for some 8 or 10 days, and then the leaves are tied up in small bundles of some four or five leaves each, and kept in the sun for a day or two to dry, which completes the curing.

*Quantity of tobacco exported.*

8. About 4,000 maunds of raw tobacco, valued at about Rs. 24,000, of which the greater part is imported from Tirhoot, and 3,000 maunds of manufactured tobacco, valued at Rs. 30,000, are annually exported from this district. Raw tobacco is exported to all the principal stations in the North-Western Provinces and Oudh, and manufactured tobacco to the eastern districts only.

*Experiments with exotic seed.*

9. No experiments appear to have ever been made with exotic seed.

---

No. 347, dated Gya, the 28th May 1873.

Memo. by the Collector of Gya.

REFERRING to this office circular No. 31R, of 1st instant, states that Gya is not a tobacco-producing country, and that therefore the Government circular in question does not apply.

---

No. 638, dated Arrah, the 17th July 1873.

From—H. W. ALEXANDER, Esq., Collector of Shahabad,

To—The Commissioner of Patna.

WITH reference to your circulars marginally noted, I have the honor to submit the report therein called for.

Circular No. 31R, dated 1st May 1873.	2. Tobacco is not cultivated in the
„ No. 36R, dated 3rd May 1873.	sudder sub-division of Arrah, excepting
„ No. 55R, dated 23rd May 1873.	in such a very small quantity as to deserve no notice.

In Buxar the Deputy Collector reports:—

“Tobacco is grown in small quantities solely for local consumption here and there in the ‘korar’ lands near the villages throughout the sub-division.

“I have not the means of giving an estimate which I could believe to be approximately near the mark in reply to this question; all I can say is, that the cultivation is very limited, being confined to villages here and there in which there are koeries, and that I do not think a single village can be found in which as much as two beeghas are grown.

“The average quantity produced per beegha is from five to six maunds (after drying and making it fit for use), or as cut fresh about twenty maunds.

“Exclusive of rent the cost of cultivation per beegha is about Rs. 10, and the ‘korar’ lands pay rent.

“It is sold for consumption at one anna or nine pies per seer. One anna being the price of the best, and three pice that of the second best. The quality is much the same throughout the sub-district.

“Any ‘korar’ land near the village that can be irrigated is suitable for the cultivation. It is invariably irrigated, and the only water that suits it is what the natives call ‘tez pani,’ i.e., a kind of

brackish water unfit for drinking purposes. The manures generally used are cow-dung, straw, and ashes. The seed is allowed to germinate and spring up in seed-beds; it is then transplanted into beds previously irrigated and prepared for continual irrigation in the same way as poppy beds. It is sown in the native months of Assin (September), transplanted in Kartick (October), and cut in Phalgun (February). The whole plant is cut down at the root.

“On the second day after the cutting, the leaves are picked from the stalks, which are thrown away; then come two processes according as the tobacco is to be prepared for eating or smoking. Tobacco for eating is prepared in the following simple way:—At the time the leaves are pulled from the stalk, they are tied together with a tobacco leaf in bundles of five or six leaves, which are kept slightly damp, and pressed till they adhere, and after two or three days of pressing the process is complete and the tobacco is fit for consumption. The regular tobacco for smoking is prepared in the following way:—The leaves are put into a vessel with ‘goor’ in the proportion of a maund of leaves to thirty seers of ‘goor,’ and boiled for four or five hours. The whole being amalgamated in this way, it is turned out to cool and dry on ground which has been made smooth and clean for the purpose, and when dry it is ready for use and is broken up as required; but besides this the tobacco used for eating is also often broken up and used for smoking; the greater part of the consumption is in smoking.

“There is no export of the tobacco grown here, nor am I aware that any experiments with exotic seed have been tried.”

In Sasseram the Deputy Collector reports:—

“Tobacco is cultivated yearly in Sasseram city lands, and in the ‘dehat’; there is in some villages a small quantity grown in land lying close to the villages with irrigation facilities. The climate of Shahabad generally is dry, but the southern portion of this sub-division is damper than the northern portions.

“Eighteen acres have been under regular cultivation about the city, and from 66 to 100 acres in outlying villages.

“The average produce per acre is 17 maunds 24 seers.

“The cost of cultivation is Rs. 24 per acre, including wear and tear of stock.

“The quality is a coarse kind called ‘Choupali,’ and the general price Rs. 4 a maund.

“The seed is first sown in nurseries on prepared land in the month of September, and, if not watered by rain, is irrigated from a well. The end of October, when the seedlings are about half a foot high, they are transplanted in rows one-and-a-half feet apart. The land must not be too high or too low. It receives 10 or 12 floodings. The manure used is ashes, cow-dung, and sheep-dung. This is collected in a hole and allowed to rot during the rainy season. It is scattered over the land in September before sowing. The seed is sown in September, transplanted in October, and cut in March and April. The stems are cut, and a second crop is obtained in the middle of June.

“One-fourth of the tobacco produced in Sasseram is consumed in the city itself, and three-fourths sent to local markets, purchased by mahajuns or travelling merchants (beparies). There are no exports at

all hence outside the jurisdiction ; the trade is quiet internal. Tobacco is mainly imported from Chota Nagpore and the Central Provinces."

In the sub-division of Bhuboah, an average of 131 acres of land are reported to be under cultivation ; yearly average produce per acre is 4 maunds and 20 seers.

The yield of the plant, cost and processes of cultivation, time of sowing, transplanting, and cutting, are much the same as in the sub-division of Sasseram. It is all locally consumed and not exported anywhere.

No. 172, dated Mozufferpore, the 22nd August 1873.

From—F. M. HALLIDAY, Esq., Collector of Tirhoot,

To—The Commissioner of the Patna Division, Bankipore.

WITH reference to your Circular memorandum No. 31R, dated 1st May, and Government Circular No. 11, dated 3rd April last, calling for a report on tobacco cultivation, I have the honor to submit the following:—

2. Tobacco cultivation is carried on all over this district, but the most extensive cultivation, as well as the best tobacco, comes from the Tajpore sub-division in pergunnah Sareysa, which is famous for the good quality of the plant.

3. I beg to submit the following report on the subject, prepared by Mr. Wace for his sub-division of Tajpore:—

2. Tobacco is cultivated all over this sub-division. The proportion of land bearing it to land yielding other crops, varies very much in different villages. The more high land there is in a village the more tobacco is grown, but taking all together, I doubt if the area cropped with tobacco comes to more than 4 or 5 per cent. of the whole of the cultivated lands of the sub-division. One of the planters has put it as high as 10 per cent., but he was evidently writing of the villages about him, which are high. Even if this estimate for his neighbourhood is correct, the Tal Beryla and the large chowrs in other parts would bring the average down. The tobacco of the Sereysa pergunnah is considered better than that of those surrounding, and is, I am informed, famed through India. The soil of the villages bordering on the Gunduk is considered to be especially suitable for tobacco cultivation. I am not aware that there has been any considerable fluctuation in the area under cultivation during the last five years.

3. I proceed to sketch the various operations connected with this industry from first to last. The first thing is to select the land ; as I have already remarked, high village lands are considered most suitable ; the soil should not be too light—sand is considered bad—a slight admixture of clay is thought good. The land lies fallow from the clearing of the *rubbi* crop, and from that time up to September is under constant preparation. It is duly ploughed and manured, the land about the house being often selected ; it receives a good deal of manure in the early mornings, and the ashes and other refuse of the house are generally thrown away on it ; but, besides this, whether it be near the house or not, it is manured with cattle and sheep-dung, cattle being littered on it.

4. The seed is never sown broadcast, but in little beds in the month of September. At the end of the rainy season, when the plants are four or five inches high, they are transplanted, about  $1\frac{1}{2}$  feet apart, into the selected land, which has previously been thoroughly cleared of weeds. For a day or two, till the plants have well struck, they are watered. This is the only kind of irrigation practised on the crop, except in some places along the banks of the Ganges, where the nature of the soil necessitates an occasional watering, even after the plants have well struck.

5. From that time till the tobacco is sold, constant attention is necessary. The two great objects, till the plant is cut, being to preserve the land clear and pulverized, and the plants from wasting themselves in sprouts, shoots, and sucklings. When the plant has got to the proper height (say 1 to  $1\frac{1}{2}$  feet high) the top is broken off and a little skewer is inserted at the fracture and pushed a little way down. This is to dwarf the plant and to prevent it throwing out more shoots; the leaves then on the stem, from 6 to 9, make the crop; no new ones are allowed to sprout, and any attempts of the plant to waste its energies either in sucklings from below the ground or shoots from above, are promptly suppressed. The land is constantly weeded and pulverized every three or four days, the ground just round the stem being afterwards patted down. The dangers now to the crop are heavy rain and an insect that bores down to the roots, and is dislodged by digging and pouring in water.

6. In this way the leaves grow till the end of January or the beginning of February, when the plant is cut down to within two or three inches of the ground. Leaves are never plucked singly.

7. The method of curing is as follows:—The plants are allowed to be on the ground as cut for a day or two; they are then carried to some grassy spot and laid out to catch the sun during the day and the dew at night, being turned daily. After this has gone on for eight or ten days, every third or fourth day the plants are stacked together till they get heated, when they are again spread out to cool. If at this time the dew is thought not sufficient to cool the plant, at evening time a little water is scattered over the leaves as they lie; this goes on for twenty days or more. The plants are then brought into cover and stacked; they are changed every third or fourth day, the top going to the bottom, and so on. It is important now to prevent them getting over-heated; if the leaves show a tendency to get crisp, the heaps are covered with plantain leaves or damp grass, over which is put a blanket to make the heap sweat. The leaves are then separated by a *khurpee* or *huswa* from the stem; a little of this being artfully cut off with them to make weight. They are then tied, five or six together, with strips of date-leaves and piled together.

These piles are again watched carefully till it is evident that the leaves will not heat any more. They are then tied up in bundles of four maunds each, wrapped round with straw, and are then fit for the market; if not immediately sold, they are stowed away in some dry place. If the leaves are not of a good colour, the cultivator may, before opening them for sale, get a little good tobacco, boil it, and sprinkle the juice over them after the last process of drying; but this

is more a trick of trade than a method of curing, which being really nothing more than a careful alternative of heat and moisture, no extraneous matter being introduced.

7. It is not every land that will yield a second crop worth the attention that it calls for, but if a second crop is taken in Boisak and Jeyt it is tended in much the same way. Even after this is taken up the ryot is not at rest. There are the two or three plants which have been allowed to run to seed to be watched, and the seed is picked, if possible, when no one else is looking on, and after being gathered is stowed away dry, and carefully guarded from candle light.

8. The average yield per beegha may be put at 12 to 15 maunds; 20 maunds being a very good yield. The crop is now and then sold standing; as may readily be imagined, Babhuns and others do not care to undertake the constant tending of the plants after they are cut, as I have sketched above, and so sell the crop off as it stands to some koeri or hardworking man, at rates varying from Rs. 2 to Rs. 4 per cottah.

9. It is exceedingly difficult to give, with any exactness, the cost of cultivation and curing; so much of the work as described can be done at odd moments by members of the family, that it is hard for any man to estimate the actual cost to him. But I may report that of four or five estimates I have had made, the lowest is Rs. 12 and the highest Rs. 30 per beegha; I should be inclined to put it at about Rs. 20 per beegha.

10. To the value of the actual labor expended must be added zemindars' dues. I am told that a ryot at times pays as much as Rs. 15 a beegha annual rent for good land, and even where the land cultivated is a part of a holding at fixed rates, or with a right of occupancy, the actual payments for the land are generally in excess of the rents shown in the jumabundee. All ryots cultivating tobacco, except those of the higher caste and more independent character or position, pay an extra cess to the malik or ticcadar. There are three grades of assessments: the rate per cottah is 2 annas, but this is only realized on the whole beegha when the crop is of the first quality. If the crop is of the second rate quality it is levied on 10 cottahs; if third rate, on 5 cottahs.

11. The last call on the ryot is the percentage of the "dalal," who helps to drive the bargain between the ryot and the trader who goes about the country buying up tobacco for exportation. The average rate of this is Rs. 1-9 in every Rs. 100.

12. Information as to the export of tobacco, which is very largely carried on, is as difficult to give as information as to the area on which tobacco is grown. Tobacco leaves the sub-division in various ways. Some of the ryots themselves export it in carts to Nepal, others take it to Hajeeppore, and there dispose of it; while a considerable quantity is taken in the same way to a mart named Islampore in the Behar sub-division. Many thousand maunds are bought up by the travelling merchants and transported by river and rail to the Upper Provinces and Bengal. It is exported in bundles tied up in straw, the preparation of which I have above described, if by manufactured (*vide* heading 8 of the Government Circular) is meant prepared for smoking, the question as to its exportation in that state should be answered in the negative.

13. The price of tobacco in this sub-division is hardly as constant as might be expected from there being such a large demand for the article. This year the same quantity has, I am informed, sold as high as Rs. 5-8 and as low as Rs. 3-8. The average price for the best quality is, I believe, from Rs. 4-8 or Rs. 5 per maund, while that of inferior kinds goes as low as Rs. 2-8.

14. The tobacco commonly grown is of two kinds, called *damaka* and *churya*. The former has longer and broader leaves than the latter, and the produce per beegha is heavier; there is not much difference in the strength of it. There is a good deal of what is called *belotee* tobacco grown, I am informed, in the Hajeepore sub-division, but about this it is very scanty; this is smaller but said to be stronger. Mr. Lloyd, of Shahpore, Undi, tells me that a predecessor of his, some time ago, at that factory got up some Virginia tobacco seed from the Agricultural Society and distributed it in the villages near. It was only sown on the best lands. It gave a larger yield per beegha and was readily bought up by the merchants before the *deshi*; but I am informed that in defiance of all the rules of political economy, though thus so far sought after, it never commanded a higher price than the *deshi*. There must be something in this assurance, however, for the cultivation of Virginia tobacco in these villages is very small. The area under tobacco cultivation is estimated at 15,600 acres.

15. The Deputy Collector at *Seetamurhee* reports that in that rice-producing part of the district there is very little tobacco cultivated and the climate is not well suited for it. The general opinion of those able to give information on the subject is, that not more than two acres per village is cultivated in the whole of that sub-division. The number of villages is 1,070, and calculating at two acres per village,

\* 1,893 acres are entered as a rough calculation in the Statistical return alluded to further on.

there would be 2,152 acres under tobacco cultivation.\* The average quantity produced per acre is 10 maunds. The ground rents at Rs. 5 to Rs. 6 a beegha, giving only one crop in the year. The cost of cultivation is from Rs. 4 to Rs. 6; the quality is stated to be inferior to that grown in the other parts of Tirhoot, while the price per maund is Rs. 4, and the yield is 7 to 10 maunds, according to the description of the land. Mr. Tripe, an indigo planter, writes that there are two kinds of tobacco cultivated, one for smoking and one for chewing; the former is cut when green, boiled with molasses, &c., and then dried and is fit for use. One maund of tobacco-plant gives one maund and a quarter of smoking tobacco. The leaf only of chewing tobacco when green would give about 20 maunds per acre. In this sub-division it is cultivated on high lands; after transplanting it is watered four or five times, cow-dung and ashes being used as manure. It is sown early in September, transplanted near the end of October, and gathered in March. No second crop is obtained. The leaf is dried and prepared in much the same way as that described by Mr. Wace in Tajpore, above stated. No tobacco is exported; what is grown is used for local consumption; but considerable imports come from the eastward of this sub-division from the other side of the Kumlah river. Havanna and Virginia tobacco have been grown experimentally in the Seetamurhee sub-division, and have been said to

answer well. I append for your information a note on the subject kindly furnished by Mr. Anderson, of Kamtowl.

In this neighbourhood not much tobacco is grown, and I can form no idea of the extent to which it is in the district generally.

The ground selected for the crop is high land in the vicinity of houses, manured with cow-dung, renting at Rs. 5 or Rs. 6 per beegha, giving only one crop in the year. The expense of cultivation and preparation may be from Rs. 3 to Rs. 4, and according to description of land, the yield 10 to 15 maunds, selling at from Rs. 3 to Rs. 5, according to quality.

The seed is sown in *beds* immediately after the rains in October, and the little plants planted out in the following month in the same way as cabbages.

When the plant is a little grown, *small leaves* are pruned off as they grow, and the larger ones alone allowed to grow to maturity. Cutting takes place in January or February. The *whole* plant is cut, *leaves and stems*, but from the little pieces of *stems* left in the ground new leaves immediately spring, and a second cutting is got. The tobacco of the first cutting is used for eating, that of the second for smoking. The preparation is very simple. The plants, just as they have been cut, are spread and left out on the ground, absorb moisture during the night and dry during the day. In about a fortnight the leaves are dry, and are then packed in straw; must be opened up now and then to air to prevent mildew, and the tobacco is fit for use in a month or two.

Exotic seed answers very well. I have sown Havanna and Virginia (growing separate, but now got mixed) on my garden for the last twelve years. The plants are often very fine, and I *think* better than those of this country; but natives to whom I occasionally give the tobacco, say it is not so pungent to the taste, which they like, as their own.

5. In the Mudhoobunnee sub-division tobacco is extensively grown, principally in pergunnah Bachour, where the plant is extremely fine in size, vigor, and flavour. Here as elsewhere high land is essential; in irrigation each plant is individually supplied with water; the water is not turned into an entire field at once. Mr. Barlow states that no statistics as to the number of acres under cultivation during each of the last five years are obtainable, and without great delay no useful answers could be given. I find, however, on a reference to the papers I submitted in December 1871, containing certain statistics, that the area under tobacco cultivation in the Mubhoobunnee sub-division was approximately estimated at 2,933 acres. The price of the crop is about Rs. 5 per maund in this part of the district; the method of cultivation and curing is the same as elsewhere. The quantity of tobacco exported is not known, but it is said not to be large. The usual practice is to export it in bales made up of several bundles as manufactured. I am unable to give the value of exports. No experiments seem to have been made in this sub-division. Two kinds of tobacco are grown: one, the usual plant with the long, narrow leaf, the other a broad, short, curly leaf, which is called *wilayati*. I have no information as to whether it is indigenous or not, but tradition has it

that this kind of plant was first introduced years ago from foreign seed. It is considered much stronger than the other kind, and is said to be much appreciated by the Nepalese, who take away some quantities from our pergunnahs along the border. Pergunnah Bachour, where it grows best in this sub-division, is described by Mr. Barlow as having a rich, good surface stratum, with an under stratum of sand, which latter is usually reached at  $1\frac{1}{2}$  or 3 or 4 feet from the surface. As a river (the Kumlah) runs through the locality, it is probable that the supply of water is conveyed by filtration when the river rises, and land stratum equally allows heavy rain to sink down when clay or loam would cause the plant to rot by the quantity of water retained. When the upper soil is too shallow, the roots of tobacco dry up for want of moisture.

6. In the Durbhunga sub-division the chief localities of this cultivation are in the south and south-east. The average quantity produced per acre is estimated at eight maunds from the first cutting and two-and-half maunds from the second. The cost of cultivation per acre is put down at about Rs. 10, including rent and watering. The quality of the crops of different localities does not vary much, except that the first crop generally sells for Rs. 5 a maund and the second for Rs. 2-8. The area under tobacco cultivation in the Durbhunga sub-division was estimated at 6,500 acres.

7. From the Hajeeopore sub-division I have not been furnished by the sub-divisional officer with any particulars. The statistical papers above quoted show me that the area under tobacco cultivation has been estimated at 11,950 acres. The cultivation is carried on chiefly in the east and south-east of the sub-division, bordering on pergunnah Sereysa. There is very little tobacco on the west, comparatively speaking.

8. In the sudder sub-division the area under tobacco cultivation is computed at 1,630 acres. The usual yield of a beegha is 10 to 12 maunds.

9. Throughout the district, lands used for tobacco cultivation command a high rental. I have been supplied with the following details as to the usual expense of cultivation in the sudder sub-division, and I conceive the calculation would apply equally to the rest of the district:—

	Rs.	A.	P.
For the preparation of land prior to sowing	...	8	11 0
Seed	...	0	4 0
Weeding, three times	...	2	4 0
Morelownee (transplanting)	...	0	6 0
Plucking the small leaves which stunt the growth of the plant, called <i>kankhi torni</i>	...	3	0 0
Cutting, five men a beegha	...	0	5 0
Drying and spreading, two men for three months, at Rs. 2-8 each	...	15	0 0
Total	...	29	14 0

or, say Rs. 30; add to which the rent at Rs. 5 per beegha, and a cess called katwali, of two annas per cottah, levied by the zemindars for the privilege of the cultivation, Rs. 2-8, we have a total expenditure

of Rs. 37-8. The produce of, say 12 maunds of tobacco off one beegha of land may be valued at Rs. 5 per maund = Rs. 60; thus a profit to the cultivator would accrue of Rs. 22-8. But this profit is again subject to a deduction of three annas a cottah given to the mahajun, who advances the money, equal to Rs. 3-12 for the beegha, leaving a net profit of, say Rs. 18-12. I give the figures as they have been supplied to me, but I am inclined to think that the cost of cultivation in this calculation has been estimated high, and that in the localities where the cultivation is most extensively carried on, the profits are very much more. The method of cultivation requires constant attention and continued labor, but when there are several members of one family employed, the cost is of course lessened. I have mentioned in my calculation of cost of cultivation the rental of the land at Rs. 5 per beegha, but in parts of the Hajeepore and Tajpore sub-divisions, the rental, though perhaps not as a rule quite so high as that mentioned by Mr. Wace, viz., Rs. 15, is frequently as high as Rs. 10 and Rs. 12. Occasionally some lands in the thickly-populated parts of Hajeepore command Rs. 20 per beegha.

---

No. 147, dated Chupra, the 8th August 1873.

From—J. S. DRUMMOND, Esq., Officiating Collector of Sarun,

To—The Commissioner of the Patna Division.

WITH reference to your circular memorandum No. 31R, dated the 1st of May 1873, forwarding copy of Government circular No. 11 of the 3rd of April last, calling for a report, in connection with the cultivation of tobacco, I have the honor to state as follows.

1. Tobacco is cultivated in Sarun to a very limited extent. It is grown in small patches in most of the villages, chiefly on the site of old houses.

2. The approximate number of acres under cultivation during each of the last five years was about 500 acres.

3. The average outturn varies according to the quality of the soil. In "bhanger" or dry lands the produce is 80, and in "kanch" or moist soil 40 maunds of fresh leaves, or about 10 or 12 maunds of dried leaves per acre.

4. The cost of cultivation is from Rs. 6 to 7 per acre, exclusive of rent, which ranges from Rs. 6 to 10.

5. Two kinds of tobacco are grown, of which one has leaves, which are short and very broad. This kind is much stronger than the other kind called "Sagoah," of which the leaves are about 18 inches long and four or five inches broad. The quality of tobacco is very inferior, and it is sold from 1 maund 15 seers to 1 maund 20 seers, "pucka" per rupee.

6. The ground is cleaned and dug up in the rainy season, and in October the seed is sown in beds, and when ready, it is transplanted to the plot of ground prepared for the purpose. When the seedlings are transplanted, each plant requires water separately twice a day for

three days in "kanch" and six days in "bhanger" lands till the young plants take root. In "bhanger" lands irrigation has to be carried on till the plants are ripe for cutting; they are irrigated about once a fortnight, and the earth round the plant has to be turned up occasionally. In "kanch" lands the plants are not irrigated after they have taken root, but the earth about the plant has to be loosened from time to time to prevent its becoming hard and to absorb moisture. "Goara," or land in the close proximity of villages, is preferred. No manure is used in tobacco cultivation, the soil on which tobacco is grown being always very rich and not therefore requiring any further manuring. The top of the tobacco plant is always nipped off, as this process causes the leaves to grow larger and stronger, and it takes six months to come to maturity. The crop is reaped in the latter end of March. The leaves are plucked, and in some places the stems are allowed to stand and bear a second crop called "doonjee," which is reaped in the end of April or beginning of May. This second crop is always of a very poor quality. The stem of the tobacco is sometimes used as fuel, but more frequently thrown away.

7. The leaf is slightly dried and mixed with molasses.

8. The small quantity of tobacco grown in the district is entirely used for home consumption, none being exported. It is only in pergunnah Kusmer in the sudder sub-division that the cultivation of the crop is carried on to any material extent.

9. In 1871-72 Havanna and Virginia tobacco seed were received and distributed for experimental cultivation to Messrs. Browne and Buskins, managers of the indigo concerns at Umbikapore and Sreepore. It was reported (*vide* this office No. 52 of the 2nd of May 1872) that at Umbikapore the result was far from satisfactory, but at Sreepore the experiment met with partial success. The seed was sown in a garden near a well. The plant grew to the height of two feet six inches. It was cut and the leaves tied in bundles and dried, and the tobacco was pronounced to be much stronger in flavour than that of the common "desi" tobacco.

10. Copies of letters received from Messrs. Browne and Buskins on the subject are herewith enclosed.

---

Dated Sreepore, the 28th April 1872.

From—M. BUSKINS, Esq., Manager, Sreepore Concern,

To—J. S. DRUMMOND, Esq., Officiating Collector of Sarun.

I HAVE the honor to acknowledge the receipt of your memorandum dated 22nd, and in reply beg to state that the tobacco seed forwarded to me by Mr. Garrett was sown in the garden here near a well. It was in every respect, I believe, a most favorable spot for the plant, which came up in a satisfactory manner, growing some of it to a height of about 2 feet 6 inches. It has been cut and the leaves tied in bundles and dried. The natives say that the tobacco is much stronger in flavour than that of the common "desi" tobacco.

Dated Umbikapore, the 28th April 1872.

From—W. K. BROWNE, Esq., Manager, Umbikapore Factory, Sewan,  
To—J. S. DRUMMOND, Esq., Officiating Collector of Sarun.

I HAVE the honor to acknowledge the receipt of your letter No. 40 of the 22nd instant, and in reply beg to state that the Virginia and Havanna tobacco seed, which I received from Mr. Garrett last year, was rather a failure. I gave some of the seed to the "Assamees," who are in the custom of growing tobacco, and tried it also in my own garden, and am sorry to say that the result of all three experiments were far from being satisfactory.

No. 198, dated Motiharee, the 31st July 1873.

From—H. KEAN, Esq., Collector of Chumparun,  
To—The Commissioner of the Patna Division.

WITH reference to Government Circular No. 11, dated the 3rd April 1873, received with your endorsement Circular No. 31 of the 1st May last, I have the honor to report as follows.

1. Tobacco is cultivated to a very limited extent in the neighbourhood of Kessurea, Govindgunge, and Mehshi. It is also grown on a few deserted "bathans," or temporary cattle-grazing grounds, along the dearahs to the north and west of the sub-division of Bettiah. A dry climate is favorable to its growth.

2. The approximate number of acres under cultivation during the last five years is noted in the margin.

			Acres.
1868	...	...	100
1869	...	...	125
1870	...	...	150
1871	...	...	100
1872	...	...	160

3. Average quantity produced per acre is about two maunds.

4. The cost of cultivation is Rs. 3 to Rs. 4 per acre.

5. The quality and the price of tobacco in different localities of this district are nearly the same.

6. High lands free from inundation are preferred for the cultivation of the plant. When planted it requires to be well irrigated until it has taken root and then earthed up a little. The manure generally used is cow-dung; seed is sown in beds in the month of Bhadro, transplanted in Assin, and the stems are cut down in Cheyt. A second crop is gathered in Boisak.

7. The tobacco leaves are not cured, but boiled raw in treacle or molasses, and then used for smoking.

8. No quantity of tobacco is exported in any shape from this district.

9. No experiments were ever made with exotic seed.



## BHAGULPORE DIVISION.

No. 268, dated Bhagulpore, the 5th August 1873.

From—G. N. BARLOW, Esq., C.S.I., Offg. Commissioner of the Bhagulpore Division and Sonthal Pergunnahs,

To—The Secretary to the Government of Bengal, Agricultural Department.

WITH reference to Government circulars Nos. 11 and 22 of the 3rd April and 13th May last, I have the honor to submit the report called for on the cultivation of tobacco in the districts of this division.

2. I cannot do better than forward copies of the report furnished by the district officers, which are pretty full, and which contain as much information on the several heads as could be gathered, considering the novelty of the subject, the difficulty which attends the collection of the information required, and the very insufficient data we are at the present moment possessed of.

3. The reports—which have been prepared independently, and in respect of certain particulars no doubt mostly by guess-work—agree remarkably in respect of a certain feature, which again entirely accords with the views which my experience has led me to form upon the subject. Excluding the Sonthal Pergunnahs, it is well known that tobacco, as a growth of any importance in this division, is confined to the alluvial soil on the north side of the Ganges. The Collector of Monghyr admits that the southern or hilly portions of this district produce small quantities of tobacco here and there, but from a three years' acquaintance of Monghyr I can say that I do not recollect, except on one occasion, ever seeing a crop of tobacco south of the Ganges, and the reason was notoriously given out that the soil was unsuitable. The Collector of Bhagulpore seems to indicate that tobacco in a scattered manner is grown equally all over his district; but he immediately adds that the low estimate of yield, two maunds per acre on the south of the river, agrees with his personal experience of the crop, while again he puts the outturn at Mudhepoorah and Soopole, on the north of the river, at 14 and 5 to 25 maunds per acre. I am unable to explain why the circumstances of the Sonthal Pergunnahs, which lie to the south of the Ganges, should differ from the other parts of the division, and am inclined to think that the outturn of 16 to 20 maunds fixed by the Deputy Commissioner must be exaggerated.

4. Experiments were made in 1869 with Virginia tobacco seed, and in 1871 with both Havanna and Virginia seeds, but the results, as reported to Government were unsuccessful. Copies of these reports are hereto annexed for facility of reference. It will be interesting to watch the effect of the experiment promised to be made by the committee in the Government garden at Monghyr.

5. There does not appear to have been any attention bestowed upon the matter of collecting information as to local operations in tobacco heretofore, and consequently the records do not throw any light upon the subject. As the reports of district officers show, reference

in connection with the present call has been made to persons who, it was supposed, might be possessed of special knowledge, but without much advantage being derived in consequence. If fuller information is required, I would suggest that the subordinate executive staff be set to work to collect material, and a report furnished at a future date.

---

No. 1727G, dated Doomka, the 16th June 1873.

From—B. WOOD, Esq., Deputy Commissioner, Sonthal Pergunnahs,

To—The Commissioner of the Bhagulpore Division and Sonthal Pergunnahs.

I HAVE the honor, with reference to your memorandum No. 117 of the 23rd ultimo, or Government circular No. 11 of the 3rd April last, to submit a report on the cultivation of tobacco in this district.

*Query I.*—Tobacco in small patches is cultivated in all parts of this district; the best localities are on the banks of the Ganges in the Rajmehal sub-division.

2. It is impossible to say what areas have been under cultivation the last five years, as in many villages a few patches of tobacco are grown from 20 to 40 feet square, according to household requirements.

3. About 16 to 20 maunds, according to season.

4. About 15 to 20 maunds per acre.

5. Common indigenous qualities sell, at crop time, 16 to 20 seers per rupee; later in the season at higher rates.

6. Tobacco is sown in patches of rich land close to a homestead, where it is well looked after; manure generally used is cow-dung and sweepings of the house. In dry seasons plants are at times watered. Seed is always sown in beds at the latter end of October, and plants removed early in November when about three inches high, and gathered in January and February—single leaves at a time as they mature. No second crop is taken.

7. Partially dried in sheaves on the top of a house or railing; afterwards placed together, pressed, and put away for use.

8. No tobacco is exported from this district.

9. No experiments have been made with exotic seed.

Sonthals and others of the poor laboring classes generally make use of tobacco in its crude state by crushing the leaf in the palm of the hand and mixing it with lime—a small pinch at a time. They also smoke the crude tobacco in small pipes rudely made up of sal or other leaves, which are thrown away each time. Bengalis, as a rule, smoke manufactured tobacco generally bought at hâts and bazars.

---

No. 554, dated Monghyr, the 24th June 1873.

From—E. D. LOCKWOOD, Esq., Offg. Collector of Monghyr,

To—The Commissioner of the Bhagulpore Division and Sonthal Pergunnahs.

REFERRING to your memorandum No. 117 of the 23rd ultimo, forwarding a copy of Government of Bengal's circular No. 11 of the 3rd April 1873, I have the honor to reply as follows.

*Answer to Question I.*—Tobacco is grown in considerable quantities in the north side of the Ganges in this district, particularly in the

Begoo Serai sub-division. The southern or hilly portion of the district produces small quantities of tobacco here and there for home consumption, but it is generally supposed that the soil is not so peculiarly suited to the growth of the plant as is the rich, alluvial soil in the north. The climate is similar in every respect to that throughout Behar.

*Answer to Question II.*—At present I regret that I am unable to furnish a very reliable statement regarding the amount of land throughout the district under tobacco cultivation. I may, however, mention that 1868 was a good year; 1869, good; 1870, very good; 1871, very bad, in consequence of inundation; 1872, very good.

*Answer to Question III.*—In a very good year, I should say that at least 5,000 acres, yielding 50,000 maunds or about 1,700 tons of tobacco, are under cultivation. The average crop per acre may, I think, be put down at 10 maunds.

*Answer to Question IV.*—Tobacco requires high cultivation to bring it to any degree of perfection, and consequently, with the exception of opium, this is probably the most extensive crop which the ryots in this district raise. I believe very little money, however, passes, as what labor is bestowed on it comes from the owner's house. Any one, however, paying for labor would probably expend about Rs. 18-12 by the time he has gathered in the crop. Thus—

					Rs.	A.	P.
Rent of land	...	...	...	...	4	0	0
Ploughing and preparing the land	...	...	...	...	4	0	0
Manure	...	...	...	...	2	0	0
Seed	...	...	...	...	0	4	0
Watering the nursery bed	...	...	...	...	0	8	0
Transplanting	...	...	...	...	1	0	0
Weeding	...	...	...	...	4	0	0
Cutting, covering, and putting up in bundles	...	...	...	...	3	0	0
Total				...	18	12	0

*Answer to Question V.*—The value of the crop varies a good deal. It appears that there are two kinds generally grown in this district—(1) *kathi*, (2) *mandhata*. The average value of No. 1 is Rs. 4-8 per maund; the average value of No. 2 is Rs. 3-12 per maund. *Kathi* is said to be stronger than *mandhata*.

*Answer to Question VI.*—As regards cultivation, the best and highest lands close to the houses are, I believe, invariably selected. Irrigation is only practised in bringing forward the young plants, which are set in nursery beds and transplanted in August and September, though land is manured scantily with a mixture of cow-dung and ashes. I am informed that the leaves of the plants are not interfered with, but every available leaf is allowed to remain in order to increase the weight of the outturn. The crop is cut in January and February, and a second crop is, occasionally, though I believe not invariably, procured.

*Answer to Question VII.*—The method of curing is very simple, and not unlike hay-making in England; the crop is left on the field to dry, and turned as occasion requires; when dry, it is tied up into small bundles of about  $\frac{1}{4}$  lb each.

*Answer to Question VIII.*—At the time of the tobacco crop, merchants come round and buy up the surplus stock; these merchants come from the North-West and from Calcutta. The tobacco purchased is carried off in carts to the nearest point of the river, and thence to its destination. I am informed that two kinds of the tobacco crop are exported, one-third to Calcutta and one-third to the North-West. The value of this export will be about £13,000.

*Answer to Question IX.*—I cannot find that any exotic seed has been successfully raised in the district. Some years ago Virginia tobacco seed was distributed, but I believe it did not come up even when sown.

2. In conclusion, I may mention that there is a very general, and probably correct opinion, that with due care and attention tobacco of the finest description may be grown in Behar. The Committee of the Government Botanical and Horticultural Garden lately started in this station, will pay particular attention to the cultivation of tobacco this year. Our difficulty will be probably in turning out good-looking cigars—the great point with smokers, who appear infinitely to prefer a good-looking inferior article to the most fragrant weed hidden under a rough and rugged exterior.

---

No. 761, dated Bhagulpore, the 28th July 1873.

From—V. TAYLOR, Esq., Collector of Bhagulpore,

To—The Commissioner of the Bhagulpore Division and Sonthal Pergunnahs.

I HAVE the honor to acknowledge the receipt of your memorandum No. 117 of the 23rd May, and to submit the following report.

I addressed several of the planters, zemindars, and others on the subject, and but few of them have given me any materials for a full report. All unanimously agree on the fact that this district is not a tobacco growing one. Tobacco is grown here and there all over the district, except in pergunnah Chye and a portion of Nursingpore, Khoorha (north of the Ganges), but only in very small patches and entirely for home consumption, *i.e.*, the consumption of the growers.

It is quite impossible to answer, under these circumstances, the questions asked in detail. In every village there is a patch or two of tobacco; the crop is poor both in quantity and quality; there are no chief localities, and no tobacco is grown for exportation; the produce is consumed by the growers; as a general rule any excess over requirements is taken to the nearest market. No two persons have given the same answer to a question.

In Banka the outturn is put down at two to three maunds an acre at the outside, and I can quite believe this, having noticed the tobacco growing in that as well as in all portions of the district during the cold weather. In Muddehpooa the outturn on the best lands is said to sometimes reach 14 maunds. In Soopool the outturn is said to be anything from 5 to 25 maunds the acre, according to the nature of the soil and the amount of manure used.

The outturn in the sudder sub-division is said to be 5 to 9 maunds. Most officers, and some of the gentlemen, mention two sorts of tobacco only; one called locally *deshie* the other *wilayat*. The average selling price, at the outturn, is very differently reported. In the sudder it may be said to be Rs. 5 to Rs. 7 a maund; in Banka, Rs. 8 to Rs. 10; in Muddehpooora, Rs. 2 to Rs. 5—the Rs. 2 being for *doriji* or sprouts after the best leaves have been cut off; and in Soopool, from Rs. 4 to Rs. 6.

It is exceedingly difficult, and indeed impossible, to state with any accuracy the cost of cultivation, the tobacco being grown only in very small patches.

The following is applicable to the whole of the district, and answers questions 6 and 7:—

The field is ploughed up or, if small, prepared with the *kodali* rather finely. It is manured with ash (dry and raw), cow-dung, and sweepings from cow-stables. Raw cow-dung is by far the best manure. The seed is sown in seed-beds in the month of Assin, and the transplantation takes place in Kartick. Small holes are dug in the field, the plant is put into them in the afternoon when the rays of the sun are not strong, and some water is poured in. In the day time it is covered with a leaf for protection from sun, and at night exposed to dews. *Bari* or high land is preferred. The field is then irrigated, and the earth is loosened by digging with *kodali* for weeding purposes. The lowest leaves are broken off, and offshoots springing from the sides, to the detriment of the larger leaves, are also broken. The protruding stalk is also broken to prevent luxuriant growth of the plant. The crop is cut in the months of Magh and Phalgun. If circumstances are favorable, *i.e.*, if there is no rain in Magh, the crop is allowed to stand on till Phalgun. The stems are cut down, and from the standing roots a second crop is taken which is cut in Boisak. This crop is inferior, but it yields something. The leaves are not plucked singly.

The method of curing is this:—Each plant as it is cut is left in its place in the field for exposure to the sun and dew. When the patch of cultivation is small, the plants are brought home and cured. The process in both cases is generally alike; after exposure for a day or two, the plants are turned over and the other side is similarly exposed. When they have been sufficiently exposed, they are gathered and placed one upon another, the stems being opposite each other. If the cultivation is large, several such heaps are formed; but if small, one or two heaps are sufficient. These heaps are covered with straw or any other covering, and curing takes place.

The plants get the colour of dry tobacco, and when this is done they are again exposed to sun and dew, singly. If the plant is inferior, or for any cause the colour is not soon acquired, then a preparation of water, made by boiling the broken stalks and offshoots of the plants lying in the fields, is sprinkled over for producing the desired colour. If the plants are brought home before curing, they are heaped inside or outside the house. In some cases the lower part of the stem is cut after curing. After curing, the tobacco is bundled and kept in straw bags.

*P.S.*—No notable experiments have been made with exotic seed.

A considerable quantity of tobacco is imported, chiefly from the district of Purneah.

I awaited as many replies as I could, hoping I might get one among them which might show a *larger* amount of special cultivation, as I knew of no such myself; but all replies are alike, and all show the tobacco cultivation is remarkably small. This fact prevents any satisfactory report being attempted.

---

No. 694, dated Purneah, the 1st August 1873.

From—W. KEMBLE, ESQ., Officiating Collector of Purneah,

To—The Commissioner of the Bhagulpore Division.

II. I HAVE consulted several planters and others in the district on this subject, and have received a report from Mr. A. J. Forbes, of Sultanpore, in whose neighbourhood tobacco is largely grown.

I sent special orders to Baboo Mothora Nath Ghose, Sub-Deputy Collector at Kissengunge, to make enquiries amongst the ryots and traders in that part of the country from which there is perhaps a larger export than from Arrareah, but I have as yet received no reply from him, except a letter expressing his regret at being unable to collect any statistics, which I have duly noticed. Mr. Rattray has sent a very fair report. I regret much that I have been unable to send the information called for sooner. The delay is owing partly to the time and attention of myself and amlah being so much taken up with Abdool Kadir's cases.

III. The chief localities in which tobacco is grown in this district are the sandy ridges lying between the old bed of the Kusi and Panor, and again between the Kankai and Mahanuddy in the north of the district, in the Arrareah and Kissengunge sub-divisions. The best tobacco is grown in the villages of Dourea, Mothorah, Kala Badla, Jealghur, Dansur, Kathaib, Bosumpore, and others; these villages all lie along the high strip of country to the north of the station of Purneah, and then running up rather westerly towards Matearee and Nawabgunge. Throughout the Kissengunge sub-division tobacco is also largely grown, but I am given to understand that the soil there does not suit it so well as in the villages named above.

2. It is not in my power to give the number of acres under cultivation during the last five years, but no doubt the cultivation has largely increased. I noticed during my cold weather tour that many plots in the large grassy plains in the north of the district had lately been broken up for tobacco. Mr. Rattray estimates that in his sub-division the acreage under tobacco has increased from 4,000 to 5,000 acres. This, I should say, was approximately correct. I do not think that there can be less than 15,000 acres in the district.

3. The average produce of an acre is about 10 maunds. Mr. Rattray mentions that in the villages of Kala Balna he saw some land producing 20 maunds. This must have been an exceptionally large crop.

4. The cost of cultivation is about Rs. 13 per acre.

5. This year the price of tobacco has fallen considerably ; it used to fetch Rs. 5 a maund in the district, and Rs. 7 or Rs. 8 in Calcutta. This year it sells for Rs. 2-8 in Arrareah. The market has been so dull that scarcely any of last year's crops have been sold. In Calcutta the price is said to be Rs. 9 or Rs. 10 per *thonji*—a *thonji* being about three maunds.

6. The method of cultivation is as follows :—High land with good drainage is generally taken ; such land is generally met with on the sites of villages ; for this reason, and because tobacco is a crop which requires much care and attention, it is generally found near the ryots houses. Irrigation is practised in a small way when the plants are transplanted late in the year. Manure of cow-dung and ashes is largely used, the ashes of grass fodder and cow-dung being preferred to those of wood. The seed is first sown broadcast in the plot selected for a nursery, in the month of Assin (September and October) ; in November the transplanting takes place. The field is carefully prepared by weeding and manuring, and the young plants, which ought to be at least four inches high, are sown in the trenches or holes. The field must then be well looked after, weeded, and the plants watched ; any tendency to a straggling growth must be checked by nipping off the superabundant shoots. About the end of February, when the leaves just begin to turn yellow, the plants are cut down close to the ground and laid out on the field to dry. The lower or coarse leaves are picked off and kept for house use, and the finer part of the plant is stocked for a day or two and then again opened out and dried like hay in the sun. This is repeated once or twice, and then it is tied in bundles and taken off to the *golah* of the purchaser for transmission to Calcutta or elsewhere. I have never heard of or seen a second cutting being taken.

8. The tobacco is, as stated above, when properly dried, tied up with straw in packs by ropes made of jute.

It is generally bought up in the village by the *goladars*, or agents of the country produce merchants of large marts in or near Calcutta or Moorshedabad. It is sent down to Caragolah or other places on the Ganges or Kusi, and generally finds its way down by boat. A comparison with the returns of the Ganges-borne trade, lately published, shows that 15,000 maunds of tobacco passes Sahibgunge from Purneah on its way to Calcutta and Moorshedabad, but I should think at least 20,000 maunds go down this way ; probably as much comes from the neighbourhood of Kissengunge, and going through the Maldah rivers escapes registration ; and probably as much again comes down the Kussi, and goes by rail downwards, or up-stream by boat. This would make the total export 60,000 maunds, which is, according to my calculation made above, much below the actual amount grown. I think my estimate both of growth and export is below the reality.

IV. I regret much that I am unable now to furnish more reliable statistics. Tobacco is one of, if not the most important, article of trade here. The matter will have my attention, and I trust next season to be able to send you better information on the subject

*P.S.*—I forgot to mention that what is called *belati* tobacco was introduced some 25 years ago into the district. It is, I think, an American variety ; it has a much broader and higher coloured leaf than the old country kind, which it has almost entirely supplanted now.

No. 536, dated Bhagulpore, the 25th March 1870.

From—J. W. DALRYMPLE, Esq., Commissioner of the Bhagulpore Division,  
To—The Offg. Under-Secy. to the Govt. of Bengal in the Revenue Dept.

I HAVE the honor to report, for the information of the Government, the result of the experimental cultivation of the James River Virginia tobacco.

2. The seed received with your letter No. 2857 of the 29th July last, was sent to the district officers, and also the officers of the Sonthal Pergunnahs, for distribution among the planters and zemindars who expressed their willingness to undertake the experimental cultivation.

3. From the reports of the district officers now before me, it appears that, except in Purneah and Monghyr, where the Collectors ascribe the failure to unusual inundation, the seed did not germinate, though it was carefully sown and properly looked after.

No. 38, dated Bhagulpore, the 24th April 1873.

From—J. W. DALRYMPLE, Esq., Commissioner of the Bhagulpore Division,  
To—The Secy. to the Govt. of Bengal in the Revenue Department.

I HAVE the honor to submit the following report on the experimental cultivation of Havanna and Virginia tobacco in this division, which, as will appear from the following abstracts of reports received from the gentlemen who undertook it, has not been as successful as could be desired.

2. *Bhagulpore*.—In this district, out of the nine gentlemen to whom seed was supplied, only four have sent in their reports.

Mr. Bowers, an indigo-planter, who lives at a distance of about 75 miles on the north of the town, says that notwithstanding his attending to all the instructions the experimental cultivation proved a complete failure. He presumes the failure must be attributed to the dampness of the soil after the high inundation, and to his having received the seed rather late.

Baboo Peary Mohun Sircar says that though he sowed the seed in September it came up late, and the plants were not ready to be transplanted in March.

Mr. Graham of Colgong reports that only 15 seeds germinated, and 13 plants are still alive at an average height of 3 to 4 feet.

Mr. Morrison reports that about 130 or 140 seeds germinated in his garden, of which about 30 were destroyed by rain and an insect called *gye*, and the remaining 110 plants were transplanted. These plants are still on the ground. As to the quality of the seed Mr. Morrison says:—

“I would say, judging from the very few seeds that have germinated, that it was not of the very best quality. Any description of country seed, if treated and cured in the same manner, would, I think, have produced a different result.”

3. In Monghyr, seed was distributed to one native and two European gentlemen.

Mr. Craven reports that the cultivation in his compound has been an utter failure, though great care was bestowed on the preparation of the land.

Mr. Christian says that the seeds germinated pretty fairly; but unfortunately the plants, when about 10 inches high, were attacked by caterpillars, and the leaves were somewhat damaged.

Baboo Hurish Chunder Banerjea reports that the seed did not germinate at all.

4. *Purneah*.—Mr. Shillingford states that “the seed germinated badly, and the crop proved a failure.”

Mr. McQueen says:—“Owing to heavy rain the plant came to nothing.”

Mr. Buckland states that the seed was sown in his garden for transplanting and they germinated well, but unfortunately the plants were entirely destroyed by very heavy rain.

5. In the Sonthal Pergunnahs, Mr. Blumhardt, the Assistant Commissioner of Deoghur, is the only gentleman who was successful in the experiment. He says that “the plants which I have in my garden have grown remarkably strong and healthy, and the leaves are very large and almost ready to pluck.” The other Assistant Commissioners report that the seed did not come up.



## ORISSA DIVISION.

No. 403, dated Cuttack, the 20th September 1873.

From—J. BEAMES, Esq., Offg. Commissioner of the Orissa Division,

To—The Secretary to the Government of Bengal, Revenue Department.

IN reply to your circular No. 11, dated 3rd April, on the subject of tobacco, I have the honor to submit report.

2. *I.—The chief localities of cultivation.*—On alluvial lands along the banks of the Salundi and Byturnee rivers, in Balasore, a small quantity of tobacco is grown. In Cuttack similar localities are selected on the banks of the numerous rivers forming the delta of the Mahanuddy and Brahminee rivers; so also in Pooree the cultivation is confined to the alluvial deposits on the Koakhye and Bhargooee rivers, in pergunnahs Kothdes and Rahang.

3. There is nothing specially remarkable in the climate of the tracts where tobacco is grown as distinguished from the rest of the province. The climate of Orissa is cool and somewhat moist, with not much variation of temperature throughout the year; the sea-breezes are felt throughout the province, and in this respect Orissa resembles the localities where the best tobacco is grown, as Manilla, Cuba, and Virginia.

4. *II.—Area under cultivation for the last five years.*—The cultivation of tobacco has not been watched hitherto, nor have any statistics been collected; the cultivators keep no record of the area under cultivation. The figures given by the Collectors are—

					Acres.
Balasore	...	...	...	...	50
Cuttack	...	...	...	...	2,020
Pooree	...	...	...	...	400

The return for Balasore is probably too low, those for Cuttack and Pooree are based upon careful enquiry, and are probably not very far wrong. The district of Balasore is not, like Cuttack and Pooree, deltaic, and consequently has far less alluvial soil, suitable for the growth of tobacco, than the other districts. It imports tobacco largely from Bengal.

5. *III.—Average produce per acre.*—The variations of yield are very great: in the comparatively dry climate of Balasore the yield is given as 4 maunds per acre, in Pooree it varies, according to soil, from 7 to 16 maunds, while in the rich moist deltas of Cuttack it rises to 18 maunds; the average may be taken at 12 maunds, of 80lb each.

6. *IV.—Cost of cultivation per acre.*—This is difficult to fix, as the rent of the land, which varies extremely, is an item in the calculation. The average for the three districts are—

					Rs.
Balasore	...	...	...	...	20 per acre.
Cuttack	...	...	...	...	26 „
Pooree	...	...	...	...	22 „

but the expenses are very far apart; in some lightly assessed parts of Balasore, such as the banks of the Salundi, the cost is as low as Rs. 10 an acre; while in Jajpore, on the Byturnee, a calculation from a selected plot gave Rs. 30, and in one part of Pooree Rs. 33. I subjoin two calculations from actual farms.

*I.—Government Khas Mehal, Pooree.*

					Rs.	A.	P.
Seed	...	...	...	...	0	4	0
Rent	...	...	...	...	3	0	0
Ploughing	...	...	...	...	3	0	0
Sowing	...	...	...	...	1	8	0
Watering	...	...	...	...	2	0	0
Pruning	...	...	...	...	1	8	0
Cutting	...	...	...	...	1	4	0
Bundling	...	...	...	...	1	0	0
Other work	...	...	...	...	0	8	0
Total					14	0	0

*II.—Zemindary Land, Jajpore, Cuttack.*

					Rs.	A.	P.
Rent	...	...	...	...	15	10	0
Ploughing	...	...	...	...	1	8	0
Cost of seed	...	...	...	...	0	4	0
Planting	...	...	...	...	2	0	0
Watering	...	...	...	...	1	9	0
Tearing off leaves	...	...	...	...	6	4	0
Cutting and curing	...	...	...	...	3	0	0
Total					30	3	0

It will be observed that the details differ very widely, and that no definite average can be arrived at. Tobacco is not a staple of Orissa, and its cultivation is carried on only here and there under special circumstances, which differ in each individual case.

*V.—Quality and price.*—These also necessarily differ very much, and the home-grown article not being an extensively used staple, there is great difficulty in obtaining satisfactory data. Moreover, a great deal of the home-grown tobacco is sold at the village markets by the bundle, containing three or four leaves, without regard to weight. The following figures are therefore only an approximate number of seers of 80 tolahs per rupee :—

Balasore	...	North	...	...	...	5 to 10
		South	...	...	...	6
Cuttack	...	North	...	...	...	5 to 7
		Centre	...	...	...	10 to 14
		South	...	...	...	10 to 20
Pooree, all parts	...	...	...	...	...	6 to 7

The quality is poor and quite unfit for use by Europeans, having an acrid and raw taste and offensive smell. It is only used by the lowest classes. Tobacco imported from Bengal holds firm possession of the market.

8. *VI.—Methods of cultivation.*—As stated before, the land selected for tobacco is the alluvial soil on the banks of rivers. Manure

is rarely if ever given, as the soil has generally only just been abandoned by the flood-water and consists of a rich deposit. When tobacco is grown on high lands, which is the case only in Cuttack and the Khoorda sub-division of Pooree, a little cow-dung and house refuse are used.

9. The soil is carefully ploughed and weeded, in some places as often as ten times, during October and the early part of November. The seed is then sown in beds and covered with straw; the beds are watered daily by hand till the plants sprout. In December and January the plants, being then about 4 inches high, are transplanted. The plants are then carefully watered for three or four days, after which, in Pooree and Cuttack, they require no more water; but in the drier soil of Balasore I have observed that the crop is watered from time to time till it begins to ripen. The plant is carefully pruned and topped when it gets a foot high, and then grows till March, when it is cut down bodily, and of course no second crop can be got.

10. *VII.—Method of curing.*—This is very rude and imperfect. In Balasore the stems are split up, thus dividing the leaf into two, and it is then dried in the sun for about 14 days, when they are heaped in bundles and dried again for a further period of eight or ten days.

11. In Cuttack and Pooree the leaves, after having been exposed day and night for eight days, are wrapped in straw and buried in the ground for a month, when they are again taken out and exposed for a few days, after which they are a second time buried, with the back of the leaf uppermost, for 14 days, when the process of curing is considered complete.

12. *VIII.*—There is no exportation beyond the province; there is on the contrary, a considerable import from Bengal, as the annexed figures show:—

		1871-72.		1872-73.	
		Quantity.	Value.	Quantity.	Value.
		Mds. S. C.	Rs. A. P.	Mds. S. C.	Rs. A. P.
Tobacco imported	Balasore ...	4,639 34 12	72,379 15 5	1,571 36 0	18,138 12 0
	Cuttack ...	414 0 0	4,474 0 0	976 0 0	7,518 0 0
	Total ...	5,053 34 12	76,853 15 5	2,547 36 0	25,656 12 0

There is some internal movement within the province; the tobacco of Kendrapara is exported raw to Cuttack to the extent of 5,000 maunds, with a value of Rs. 24,000, annually.

13. There have been no experiments worth recording. Some Virginia tobacco-seed was distributed for sowing last year, but nothing came of it. If grown on the model farms under proper instructions, I have no doubt it would succeed, and that the tobacco would be popular. The Collector of Pooree observes that in those parts of India where tobacco is smoked in a hooka so many things are mixed with it, as treacle and the like, that the quality of the weed is entirely

smothered ; but the people of Orissa do not use the hooka ; they smoke cigars made of a roll of tobacco rolled up in a leaf of any other tree. They greedily consume a good Manilla cheroot, and highly appreciate the Madras cigars usually smoked by Europeans in Orissa ; no caste scruples prevent them from begging from a traveller one of his cigars and smoking it. It is, therefore, probable that they are capable of appreciating the flavour of good tobacco, and would purchase it if sold in the form of cigars at a cheap rate ; but as they are careless and ignorant cultivators of any strange thing, it would perhaps, be better to encourage the cultivation in Bengal and its export to Orissa.

---

## CHOTA NAGPORE DIVISION.

---

No. 202T., dated Camp Hazareebagh, the 10th September 1873.

From—COLONEL E. T. DALTON, C.S.I., Commissioner of Chota Nagpore,

To—The Under-Secretary to the Government of Bengal, Agricultural Department.

IN reply to your circulars Nos. 11 of the 3rd of April and 22 of the 13th May 1873, I have the honor to submit replies to the questions asked regarding tobacco cultivation from the four districts of this division.

2. It appears that the cultivation of tobacco in Chota Nagpore is chiefly confined to the tracts below the ghâts or great plateau of Chota Nagpore Proper, known as the five pergunnahs, viz., Silli, Rahe, Tamarah, Bundu, Hajain Bunta, together with some other pergunnahs of the Lohardugga district, similarly circumstanced, where suitable land is found either on the banks of rivers or on village lands.

3. There are small patches of cultivation in other parts of the Lohardugga district and in the other districts, but it has been found quite impossible to obtain any reliable information in regard to the aggregate area or the produce of these detached plots; some villages have a few, some none at all, and as a rule, the tobacco consumed is imported from Behar.

4. To the north and west of the Lohardugga district, the people smoke hookas, and the Behar tobacco is considered very superior to the local narcotic for that purpose. In the south and south-east, the people smoke tobacco rolled up into cigars, and for this purpose the local tobacco is much esteemed.

5. The Deputy Commissioner of Lohardugga availed himself of the services of Baboo Rakhal Das Haldar, Special Commissioner under the Chota Nagpore Tenures' Act, to collect statistics from the best tobacco-growing pergunnahs in his district, and Mr. Haldar's report is herewith submitted in original.

6. I submit also in original a report drawn up at Mr. Oliphant's request by Mr. T. F. Peppe, who has given much attention to such matters; both reports apply to the same tract of country, and assuming Mr. Peppe's beegha to be the local beegha, which is nearly equal to an acre, and the equivalent of a kat, the calculations of the two officers are not very divergent. Mr. Peppe gives an account of experiments in tobacco-growing and curing now being made by Mr. Grose, manager, Palandu tea plantations, near Ranchee, which promises well, and from which we may hereafter derive much valuable information.

7. The information obtained from the other districts is very meagre. As in them a very small quantity of tobacco is raised.

8. In Hazareebagh the cost of cultivation is estimated to be about Rs. 7 per acre, and quantity produced about 5 maunds, worth of

5 rupees a maund. No estimate is given of the aggregate area of the small plots. Tobacco is largely imported from the adjoining districts.

9. The Deputy Commissioner of Manbhoom, on a very rough calculation, concludes that about 800 beeghas of tobacco may be found in his district, producing according to nature and fertility of the soil, two to five maunds; but the cost of cultivation he gives at only Re. 1-12 per acre; the value of the produce at Rs. 4 to 8 a maund. It is chiefly consumed locally, but Colonel Rowlatt thinks that about 2,000 rupees worth of the imperfectly dried leaf is exported to Singbhoom.

10. *Results of experiments made with exotic seed.*—In reply to this question Colonel Rowlatt says:—"About two years ago some Virginia tobacco seed received from Government was distributed to the cultivators in several parts of the district, the produce from which was very superior to that produced from the common kind of seed. The plants grew to 3 feet in height and upwards, with large and thickly set leaves, so much so that the yield of tobacco from these plants was not less than double that which is obtained from the ordinary plants. The tobacco produced from this seed was also stronger and more pungent than that of the common kind, and was free from the fetid, bad smell that comes from the ordinary country tobacco. The cultivation of this species of tobacco is gradually spreading in some parts of the district, and will probably, in course of time, supersede the common country kind.

11. *Singbhoom.*—The Deputy Commissioner says, that in his district the tobacco is grown in small quantities on tiny plots of land near the homesteads, and of the area of these plots, which are not found in every village, he has found it impossible to obtain statistics. The cost, mode of cultivation, produce, and process of curing are much the same as that described by Mr. Halidar.

12. Of the Tributary Estates very good tobacco is grown in Bonae and Gangpore, but I am not at present in possession of any reliable statistics relative to quantity, cost, and produce. These I will do my best to obtain when I next visit the estates.

---

No. 2060, dated Chota Nagpore, the 2nd September 1873.

From—H. L. OLIPHANT, ESQ., Deputy Commissioner of Lohardugga,  
To—The Commissioner of Chota Nagpore.

WITH reference to the Government circulars Nos. 11 and 22 of the 3rd April and 13th May, respectively, on the subject of tobacco cultivation forwarded to me under your endorsements Nos. 1009 and 3233 of the 30th April and 19th May, respectively, I have the honor to inform you that I solicited the aid of Mr. J. Peppe, of the Opium Department, and Baboo Rakhal Das Halidar, Special Commissioner under the Chota Nagpore Tenures' Act, both gentlemen possessing

\* From Mr. Peppe, No. 109 of 30th August 1873.

From Baboo Rakhal Das Halidar, No. 36 of 3rd August 1873.

considerable knowledge and experience in such matters in collecting the necessary information for me; and I beg to enclose herewith in original the reports\* they have been kind enough to favor me with.

2. These reports, as you will observe, both appertain to Chota Nagpore Proper, and appear to contain all the information procurable, as well as all that is required. The cultivation seems to be almost entirely confined to the tract of country lying to the east and south-east of Ranchee, though it is also carried on to a limited extent in parts of the jurisdiction of the adjoining thana of Turpa. The total area under cultivation in the district has been roughly estimated at about 600 beeghas, and the tobacco grown is for the most part consumed locally; small quantities only are exported to the neighbouring districts of Manbhoom and Singbhoom.

3. In the sub-division of Palamow the cultivation of the tobacco plant appears to be hardly carried on at all. Mr. Forbes reports that after careful enquiry he finds "that with the exception of an insignificant area, amounting in all to a few cottahs in the town of Ghurwa, in garden lands, there is no tobacco grown in the sub-district."

4. In addition to the experiments referred to by Mr. Peppe and Baboo Rakhal Das Halidar, the only experiments in this cultivation that I am aware of were attempted by Mr. Stainforth, Mr. Herzog, and Mr. Forbes in the year 1871, with some Virginia and Havanna seed supplied by the Government, in pursuance of their circular No. 24 of the 7th July 1871; but the experiment did not in any case prove successful, as reported to you in my letter No. 1357 of the 9th July 1872. From what Mr. Peppe writes, however, it would appear that Mr. Grose's experimental cultivation has been so far much more successful, and that he has great hopes of making still further progress.

---

No. 109 dated Ranchee, the 30th August 1873.

From—T. F. PEPPE, Esq., Sub-Deputy Opium Agent, Chota Nagpore,

To—H. L. OLIPHANT, Esq., Deputy Commissioner, Lohardugga.

IN reply to the Agricultural Department circular No. 11, dated 3rd April last, I would beg to submit the following answer to the questions contained therein:—

1.—The cultivation of the tobacco plant is almost entirely confined to the district below the ghâts, *i.e.*, about an elevation of 700 to 800 feet above the sea known as the five pergunnahs.

This part of the district differs entirely in soil and climate from the plateau or Chota Nagpore Proper.

The climate resembles that of Behar, or more nearly perhaps that of Bankoora and Midnapore; the heat in May is very great, and the hot winds prevailed for upwards of a month; and in December the temperature falls very low, especially in the early morning. In the soil the chief peculiarity is the alluvial deposits along the banks of the rivers and streams by which the country is cut up into separate valleys in every direction, so that of the whole area cultivated, there may be some ten per cent. of alluvial soil on the banks of the streams. This may seem a large proportion, but it should be borne in mind that the country lies between the hills forming the plateau of Chota Nagpore on the one side, and the Soobunreekha river; and that the whole of the drainage, the plateau and the five pergunnahs as well, has to find its way to the Soobunreekha across this fertile tract of country.

2.—I have calculated that there is not more than 500 or 600 beegahs\* cultivated in this district.

\* Baboo Rakhal Das Haldar, who details the method of calculation adopted by him, gives 2,000 acres as the quantity of land under tobacco cultivation in the same area.

3rd.—It is extremely difficult to get accurate information on this point. The kahan is the usual land measure in use, and I calculated that it is equivalent to the one-fourth of a beegha. At this rate ten maunds of dry leaf at the first cutting, and three maunds for the second, is the largest outturn under favorable circumstances per beegha.

4.—For the last three years I have been endeavouring to arrive at a correct estimate of a cost of the cultivation, but without arriving at a satisfactory conclusion. Every estimate differed so materially from each other that no reliance could be placed on either. This arises from the fact that there are no definite land measures in use, and the people consequently have the most vague ideas on the subject; in some parts, however, there is a measure used called a kahan, or one-fourth of a beegha, but there is nothing definite about a kahan any more than there is about a kat; from Rs. 15 to Rs. 20 per beegha, or Rs. 45 to Rs. 60 per acre, is probably near the truth.

5.—The price of the crop seems to vary little with the locality, but varies very considerably every year. Rs. 4 to Rs. 6-4 per maund is probably somewhat above the average.

6.—As a rule all the cultivation is confined to alluvial lands; it is only in exceptional circumstances that there is any cultivation elsewhere. It is commonly grown in small patches in the gardens round the houses for home consumption, and every one makes and smokes his home-made cheroots rolled up in a sâl leaf.

There are two kinds of tobacco cultivated, viz., *bura tamaku* and *Hingulia* or *Khagaria*, also sometimes called *Velati tamaku*. There are two methods of cultivating both these kinds, which may be termed the wet or dry methods.

The large tobacco is the kind most commonly cultivated in this district. The leaf is a large lanceolate one, whereas the *Hingulia* kind have small leaves partly curled, and only half the size of the other. It is said that the smaller kind is much more pungent in flavour, but it gives much smaller produce than the large kind. It is evidently a late introduction, and is reported to have been introduced by the Kuiries from Hazareebagh some 60 or 70 years ago. I have never seen it in any other district except Manbhoom, where it is largely cultivated, much more so than in this district.

The two methods of cultivating are as follows:—

*First method.*—A seed-bed is prepared in a well ploughed and manured piece of garden-land in September, and sown broadcast. It is watered, if necessary, until the plants are 4 inches high, and in November–December they are transplanted into holes dug  $1\frac{1}{2}$  feet apart, and the young plants are protected from the sun with a covering of straw or leaves of the castor-oil plant. Before transplanting the land is ploughed about twenty times, and well manured, and levelled into beds to allow of subsequent irrigation. The principal manures are cow-dung, ashes, and sugarcane refuse; the little holes dug for the young plants are filled up with a mixture of soil and well rotted manure.

It is watered very sparingly by the hand for first week after transplanting, and then hoed two or three times, according as the land is free from weeds or not. By the time it is 9 inches high, the soil is formed into ridges round the plants, and when about a foot high the top is nipped off to make it more bushy; a slight incision is made in the stem for the same purpose. At the end of March or beginning of April the plant is cut down, leaving about 2 inches of the stem in the ground, and this is watered as before and hoed when a second crop is obtained, which is cut down in the same manner about the end of April or middle of May. It is calculated that if the first crop gives 10 maunds of dry leaf, the second will give 3 maunds per beegha: the first crop fetches from Rs. 6 per maund of dry leaf, and the produce of the second crop only Rs. 4 per maund of dry leaf. The first crop is used as dry leaf for chewing, and the second for smoking purposes, as the produce of the second crop is thought to be inferior. The *second method* is as follows:—

Both kinds of tobacco may be grown in this way, it is more usual to apply it to the cultivation of the *Hingulia* kind

A seed-bed is well ploughed and manured in garden-land in August, and the seed sown broadcast in it. No water is given to it, and when ready for transplanting in September, it is transplanted into garden-land, well ploughed and manured in much the same way as in the other method; it is watered a little, if necessary, but it is rarely required: it is also shaded from the sun in the same manner with grass or the leaves of the castor-oil plant. No water is given at any time after the plants have taken, but it is hoed several times and kept perfectly free of weeds. The soil is also heaped up round the stem as the plants get older, and by December it is cut down in the usual manner; but it is common to leave a longer portion of the stem in the ground, and in many places the custom is to strip the leaves singly without cutting the stem at all, and the plants in this way yield a continual supply of leaves until the approach of the hot weather, when it can no longer subsist without water, and it is allowed to dry up and wither, or the plants are allowed to seed for the next season's sowing. The first crop is calculated to give 6 maunds of dry leaf, and the second about 2 maunds dry leaf, at an average cost of about Rs. 8 per beegha, or Rs. 24 per acre; but it is very difficult to obtain anything like an accurate estimate, and the above is but a rough approximation.

7.—The method of curing adopted is much the same for both kinds of tobacco, and irrespective of the method of cultivation adopted.

When the plant is cut down it is collected in the field, stems and all and spread out to dry; next morning it is turned over, and again left to wither, and the third day it is again turned over; the fourth day it is collected into small bundles, containing five or six plants in each, and carried to the court-yard of a house, where it is placed on straw spread on the ground, and piled up one on top of another for about a foot or a foot and a half high, and large stones are placed on the top; if it is very dry it is first sprinkled with water, and for the next five days the same process is repeated: it is then ready for disposal, and is sent away, stalks and all.

8.—I have no means of stating the quantity exported, the only export seems to be to Singbhoom for the traders; all come from thence: there is no export to this side; on the contrary, Tirhoot tobacco finds its way to every bazar in the district, and even to Tamar, where most of the tobacco is cultivated. Tirhoot tobacco is found to be an article of import. It is said that *huka* tobacco can only be made from Tirhoot tobacco.

9.—Last year I obtained seeds of the various foreign varieties for Mr. Grose of Palandoo tea-garden, and he succeeded in getting plants of all the varieties, which did very well, but the Manilla variety succeeded best; and he has now a supply of Manilla acclimatized seed, which he has given to the ryots for trial this year. The leaves which he himself cured were very fine, and the most successful attempt at a fine tobacco I have seen in India.

He has also erected a drying shed, where there is a considerable extent of cultivation, and by arranging with the ryots, he obtained the green leaf at about 8 maunds for the rupee; and by curing it in the European method has very greatly improved its quality: indeed, had he had the means of pressing it sufficiently, the tobacco would have been very much like the American honeydew, but without the strong aroma of the latter. The leaves of the Manilla and other foreign varieties, which he cured himself, were quite fit to be made into cheeroots, and they have been sent to Calcutta for this purpose.

As he has now supplied the ryots with the seed grown by him from the Manilla variety, he will be able to obtain a considerable quantity next year to operate on. Eight maunds of green leaf with stalks were found to yield about one maund of dry leaf, and he calculates that the tobacco, as cured by him, is worth about Rs. 15 per maund in the Calcutta market, and if found to be fit for cheeroots it would be of much greater value. If the seed supplied to the ryots this year is found to thrive under the same cultivation as the indigenous kind, there is no reason to prevent a superior quality of tobacco being grown in the district at rates which would give a great profit to the cultivators. As it is, there is no great demand for the tobacco grown here at present, so that the cultivation has been for some years declining, more especially since the introduction of the poppy.

Mr. Grose's chief difficulty is now the means of pressing the leaf, so as to resemble the American smoking-tobacco, and the improvement in the aroma. By next year, however, the result of the experimental sowing of Manilla acclimatized seed will be known, and also the value of the leaf, both raw and manufactured, in the Calcutta market.

---

No. 36, dated Ranchee, the 3rd August 1873.

From—BABOO RAKHAL DAS HALDAR, Special Commissioner, Chota Nagpore Tenures Act,

To—H. L. OLIPHANT, Esq., C.S., Deputy Commissioner, Lohardugga.

AGREEABLY to your desire, I have the honor to submit the following report on tobacco cultivation in this district. It is scarcely necessary to promise that on some of the important points raised in the

Government circular No. 11 (Agricultural Department), dated 3rd April last, namely, the approximate number of acres under tobacco cultivation during each of the last five years; the quantity of tobacco exported and the value of exports; the results of any notable experiments with exotic seed, it has not been possible for me to obtain any information. I must, therefore, content myself with submitting some information on the other points contained in the Government circular, such information being partly and mainly derived from local enquiries made by one of my establishment, and partly the result of my personal enquiries.

2. Tobacco is cultivated in such parts of the district of Lohardugga as are mostly covered with jungle, and not frequently visited by petty dealers. The cultivation of the

Chief localities of cultivation with particulars of climate.

weed requiring more than ordinary care and trouble, the people of the central and more open portions of the country, where weekly markets are held and people can easily supply their wants by purchasing tobacco, do not resort to it. Tobacco is cultivated in the eastern pergunnahs, Tamar, Bundu, and others, in the northern pergunnahs, Sutiamba, and others; westward, in the vicinity of Lohardugga, and south and south-westward, in Belsian, Basin, Birutkesalpore, and Pulkot. I have no personal knowledge of tobacco cultivation in the western and southern pergunnahs of the district, but believe it is in small patches only in the rural villages, just so much as people require for supplying their domestic wants, all the towns, or larger villages throughout the district where banias reside, being mostly supplied with tobacco imported from the Gya, Shahabad, and Tirhoot districts. The weed is much cultivated in the eastern pergunnahs, and most of all in Tamar, where it is regarded as an important article of commerce. This part of the district was therefore selected for particular enquiries.

3. The climate best suited for tobacco cultivation is a wild and dry one, though in the earlier stage of cultivation rain is necessary. Much washing of the leaves by rainfall weakens the strength of tobacco.

4. It has been before observed that I have no data to form an approximate idea of the extent of cultivation in the whole district. But such an idea can be formed as regards that

Approximate number of acres under cultivation during each of the last five years.

portion of it in which particular enquiries have been made. And as the information on this point is, I believe, of a reliable character, and as in regard to other parts of the district, other officers will probably furnish you with facts on the subject, you may be in a position to form a tolerably correct idea about the extent of cultivation.

5. The standard of measurement of lands under tobacco cultivation in the eastern pergunnahs is the well known "kat"; a kat of land is not ordinarily more than 0.660 acre in area, as has been found by actual examination. A kat, however, as stated in Tamar and other pergunnahs, falls a trifle short of an acre in some villages, and rises a trifle above it in others; but for practical purposes, it may be assumed to be equal to one acre of land. There are 119 villages in Tamar, 53 in Bundu, 52 in Rahe, 12 in Silli, 9 in Jona, 8 in Hajambanta, 23 in Siri, 1 in Basantpore, or 277 villages in which the aggregate

number of kats is about 1,660. This does not include 39 villages of pergunnah Silli and the whole of pergunnah Baranda, where the cultivation certainly exists, but where local enquiries have not been made. The lowest total quantity of land under tobacco cultivation found in a village was half a kat, the largest quantity found was 56 kats, and the general average was a trifle above 6 kats in each village. Of the 277 villages mentioned above, the total areas of tobacco cultivation in 31 were brought under actual measurement, viz., 9 villages in Tamar, 6 in Bundu, 5 in Rahe, 3 in Silli, 2 in Jona, 2 in Hajambanta, and 4 in Siri. The areas in each varied from 0.700 to 28.215 acres, and the general average found was 9.580 acres per village, *i.e.*, one-third more than the average of kats previously given. This discrepancy is due not only to the small number of villages from which the average of acres has been deduced, but also to the fact that about a third part of the 31 villages belonged to pergunnah Tamar, in which the average cultivation was found to be as much as 16.160 acres in each village. When all the villages in the district under tobacco cultivation are taken into consideration, the average in each must be much smaller than 9.580 acres. As regards the nine pergunnahs named in this paragraph, I may submit that the total area of tobacco cultivation rather exceeds than falls below 2,000 acres.

6. I beg further to observe that no reasons were found for supposing that there had been either any marked increase or decrease in the area of tobacco cultivation in the district of late years.

Average quantity produced per acre.

7. The average quantity of tobacco produced per acre is from 10 to 12 bazar maunds.

8. Two varieties of tobacco are grown in the district, as will be presently seen, Maghi and Hingli.

Cost of cultivation per acre.

The cost of cultivation of one differs slightly from the cost of the other. The following is the estimated cost per acre as regards the Maghi tobacco :—

				Rs.	A.	P.
Carrying and spreading manure	...	...	...	0	2	0
12 Ploughings	...	...	...	0	12	0
Harrowing and levelling called <i>hegana</i> or <i>pattar</i>	...	...	...	0	1	0
Preparing the beds	...	...	...	0	3	0
Transplanting	...	...	...	0	8	0
Watering the <i>poa</i> or plantings, every alternate day for 4 days	...	...	...	1	0	0
Digging and weeding	...	...	...	1	8	0
Nipping off tops to prevent flowering, called <i>gausi torna</i>	...	...	...	0	9	0
Land rent	...	...	...	1	0	0
Cost of cutting and drying	...	...	...	0	3	0
Total				5	14	0

For the Hingli tobacco, we have to deduct from the above two annas (the carriage of manure) and to add Rs. 2-13 (cost of irrigation) and Rs. 2 (for additional digging and weeding); so that the total cost per acre for this tobacco is Rs. 10-9.

9. In practice, and as a rule, especially in regard to tobacco as an article of home-consumption, much of the above cost is not incurred. Whole families—men, women, and children—engage in the cultivation and thus save the bulk of the expenses.

10. The two varieties of tobacco mentioned above differ considerably from each other in quality. The Maghi is very weak and is not liked by smokers that have the means of paying for better tobacco; it passes off well, however, with the great body of the people. The Hingli is of stronger and better quality, but still greatly inferior to Tirhoot tobacco. Prices wholesale, for Maghi Rs. 4 or Rs. 5 per bazar maund, for Hingli from Rs. 6 to Rs. 9; retail, for Maghi 2 annas per seer, for Hingli from 3 to 4 annas.\* The retail price of Maghi or Hingli, obtaining among the pedlars is as high as 12 annas per seer.

Quantity and price of crop in different localities.

\* The retail price of imported Tirhoot tobacco varies from 4 to 5 annas per seer.

11. It may very well be expected that the method of cultivation cannot but be a simple and rude one in this country. People have never aspired to know any better methods of cultivation and curing, that improvement in the quality of the weed might be effected. For the Maghi tobacco, high land near homesteads is preferred, or at any rate found to be convenient. Dung of cattle is daily heaped not far from the huts in which the cultivators live, manure (*nad*) is therefore close at hand. There is not much chance of damage to the crop, when it is but a step from the hut, women and children may conveniently be engaged in eliminating weeds and grass from the field; hence those who require tobacco for their own use, rather than for sale, prefer the cultivation of the Maghi variety. The field in which the crop is to be raised is ploughed in May, gravels are removed, and small heaps of manure thrown about 5 or 6 feet apart; the field is ploughed again, and the manure well mixed up with the soil. Early in July the seed is sown broadcast in seed-beds, the soil of which must be of a rich character, and covered with dried hay, over which water is sprinkled to assist germination. In a month the seedlings are ready for transplantation. During July beds in the field, in squares or in parallelograms, are prepared for the reception of the seedlings, the ridges of the beds serving to dam up rain-water for deep soaking of the soil. Early in August, when at least three leaves have come out, the transplanting is effected by the men, assisted by women and children. The growth is rapid. The field must be kept free from grass and weeds, and delved and stirred frequently. Plants, except those intended for producing seed, have their flower-shoots broken off (called *gausi torna* or *tusa torna*), flowering having the effect of weakening the strength of the leaves. Some people take a crop late in October; where the plants are well grown and sufficiently mature, they cut the stem, leaving a little of it on the ground. Fresh leaves again shoot forth, and are of a smaller size than those of the first crop, and are cut in January (Magh). A considerable portion of the leaves at the second and smaller crop has to be rejected as "bitter." More generally the plants are allowed to stand till January; when they are three feet or more from the

ground, the leaves then get blotches of a dull orange colour, the borders becoming yellowish. This is the time of taking the crop; the stems are cut down to the ground, and no more crops expected from the plants thus cut.

12. For the Hingli, low and alluvial land is selected. The fields may be a kos or more distant from the home of the cultivator, and are generally near the river banks. A moderately cold and dry climate suits the Hingli best. Late in September the seed is sown in seed-beds, and the seedlings transplanted late in November to a field duly prepared beforehand. The growth is less rapid than in the case of Maghi. No manuring of the field is necessary, but the soil is well pulverized by both ploughing and delving. When conveyed to the field, the seedlings are watered to prevent drying up. Either in the morning or in the evening the transplanting is effected. For 8 to 12 days after the transplantation the plantings are covered with small hay-made caps called *biri* to give them warmth. The field is irrigated three or four times every month, and carefully weeded; the weeding is called *nikaoni* or *sohni*. The flowering of the plants is prevented in the same way as in the case of Maghi tobacco; the sign of maturity of the plant is also the same as it is with the Maghi. In April the crop is gathered by plucking single leaves, a second and inferior crop taken from the stems late in May. But this is not invariably so; some people cut the stems down to the ground in April, and do not require a second crop. At the time of cutting, a watery exudation is found on the leaves.

13. The plants have to be guarded against an insect about an inch or so long, called *charka tiju* or *nalitiju* or *poka*, which lives in the body of the stem; it comes out and eats up the leaves. The method of prevention adopted is to cover the plants with ashes of vegetable matter when the insect is found in the plant, the stem is split, and insect taken out. If the body of the stem is much injured, it is cut off altogether, and a new stem shoots forth.

14. The method adopted in this country for curing tobacco is as simple as the method for growing it. The people further do, through ignorance, a good deal to weaken the tobacco. After cutting, which may be done at any time of the day, the stems or the stalks (where single leaves are plucked) are split down for the purpose of quick drying, and are then exposed to the sun for seven or eight days till dry in the case of the Maghi, and for two days in the case of the Hingli. Bad leaves, the undermost ones on the plant, and distinguished by their yellow colour, are rejected. The leaves selected are then hung up in bunches and aired in a room. They are not pressed, as done elsewhere. During the rains, the leaves are packed up and stored.

15. It may be stated generally that the Mundari portion of the cultivators grow just so much tobacco as is needed for their own use. Whenever there is any excess, it is taken to the nearest market, and bartered for other useful articles. It is the Hindus (Kuiries, Kuirmis, and others) who raise tobacco as a commodity. It is exported in raw state to the market at Ichagarh in Patkuni (Manbhoom district), and also to the

Quantity of tobacco exported; shape in which exported, raw or manufactured; with value of exports, and places to which export is made.

markets in Kharsawan and Seraikela (Singhbhoom district). To no other places that I am aware of is tobacco exported from Lohardugga to any appreciable extent. I have not been able to obtain even an approximate idea of the quantity and value of tobacco exported. I may, however, state that there are now hundreds of maunds in store in some villages of Tamar, intended evidently for sale out of the district.

16. As has been submitted in paragraph 1 of this letter, I am not aware of any notable experiments made with exotic seed. But for the support of what I am going to submit in the next following paragraph, I deem it proper to mention what I know about an experiment made by a native resident of Ranchi. A small patch of ground was planted with seedlings of the seed of Gya tobacco; the crop was a tolerably good one, and the tobacco, though inferior to the produce of the Gya district, was better and stronger than the Hingli mentioned above.

17. It is my humble opinion that tobacco cultivation is greatly capable of extension in this district; the climate and soil do not appear to be unfavourable to the growth of tobacco. There are capital and extensive lands on the banks of the Koel, the Soobunreekha, the Kanchi, the Karo, and the Sunk rivers for its growth. Both the mode of cultivation and the method of curing may be greatly improved, in imitation of those adopted in America and elsewhere, and I believe that the introduction of foreign seed will be attended with eminent success.

18. I do not know if any opinion as to the desirability or otherwise of imposing a tax on tobacco has been called for. Without meaning that any opinion of mine, one way or the other, on this question (which has been discussed so much, both officially and in the journals) can have any weight, I may venture to state that I lean towards the opinion expressed in a recent issue of the *Calcutta Review*, by Mr. P. Robinson, namely, that tobacco should be treated precisely in the same way as opium, and that it is a legitimate source of imperial revenue. I do not class it exactly with salt; it is more a comfort than an article of absolute necessity as salt is, yet it is a comfort which people will not easily give up. I do not think that a reasonable and moderate tax on tobacco, regulated by well-defined laws, need be oppressive at all. The district of Lohardugga affords, I think, an illustration of my meaning. The great bulk of people here, though naturally of a happy and elastic frame of mind, are perhaps poorer than people in many a district in Bengal. They use tobacco almost universally; it is indeed difficult to name any class of the people as an exception, poor and rich, young and old, men, women, and children, use it: yet they consume it in such a peculiar way, and in such small quantities, that a moderate tax need not be felt as burthensome by a family even of small means. Further, the price of retailed tobacco has doubled within the last five years, and without any audible grudge from the people.

19. Tobacco appears never to have been used for manufacturing snuff in this district. It is smoked by Brahmans, Rajputs, and other well-to-do Hindus, and the large landowners whose number, in comparison with the number of those who consume tobacco otherwise, is

by no means large. A much larger quantity of tobacco is consumed by a man per diem when it is smoked than when it is used in any other manner. A tobacco tax may slightly (if at all) be felt by tobacco smokers. But even in smoking, when tobacco is used by the common people, they can manage with a very small quantity; a very small scrap of the leaf is wrapped in a dried sâl leaf, which bears a considerably larger portion to the former, and if several such *chutas*\* are smoked during the day, not much tobacco is consumed. The great majority of the people use it in a pulverized state mixed with dry lime. A grown up man, much addicted to tobacco, does scarcely consume in a month more than what would be equal in weight to 20 pice (of the currency), the present price of which is  $1\frac{3}{4}$  anna; such a man now-a-days expends annually Re. 1-5, and five years ago he did not expend more than 10 annas for tobacco. This increase on the retail price, though made by the banias without any extraordinary reason to justify it, has been accepted by the people, and I believe they could bear a little more burthen imposed on them by the Government, from which all the present prosperity of the country has proceeded. The incidence of the taxation would fall on so wide an area, that a tobacco-tax, in my humble opinion, is not likely to give rise to any general popular discontentment.

20. Apologizing for the length of this report, which at the same time is unfortunately deficient on so many points of information, &c.

---

\* Called also *Phika* or *Chungi*.

## ASSAM DIVISION.

No. 204GT, dated Shillong, the 16th July 1873.

From—COLONEL HENRY HOPKINSON, Agent, Governor-General, North-East Frontier, and Commissioner of Assam,

To—The Secretary to the Government of Bengal, Agricultural Dept.

WITH reference to your circular letters noted on the margin, I have

No. 11, dated 3rd April 1873.

No. 20, dated 28th April 1873.

No. 22, dated 13th May 1873.

the honor to forward the annexed statement, exhibiting all the information which I have been able to procure from

some of the districts of Assam, in the different points noticed in your first cited letter, in connection with the cultivation of tobacco.

2. From the districts of Durrung, Nowgong, and Sebsaugor the information, you will observe, is complete, but I have asked the several Deputy Commissioners to supplement their reports, and further particulars will be communicated to you when received.

3. From Luckhimpore, I have not yet received any reply, and

\* Khasi Hills.

Naga Hills.

the Deputy Commissioner of the two\* hill districts report that tobacco is not

cultivated in their districts.

4. Tobacco is only cultivated in Assam for home consumption, only in very small quantities. Major Sherer states that about two cottahs of land are thus cultivated for the use of a household, where it is cultivated at all, but I think this even is somewhat over the mark.

5. Local tobacco is only used for chewing, those who smoke prefer the Bengal drug, which, though considered superior in quality, is about half the price of Assam tobacco, but it must be recollected that very little of the latter is offered for sale, and this is possibly the reason for the high price it fetches.

6. All the district officers report that no tobacco is exported from the province.

7. I recollect receiving a small quantity of American tobacco seed for trial a few years ago, and I distributed it among the several officers. Major Lamb is apparently the only officer who has remembered this fact, and he states that the result was a failure.

8. At one period of my life, I was in the way of hearing a good deal about the skilled cultivation of tobacco in India from some German planters with whom I was acquainted, and the great fact I gathered from their experience was, that it was not so much the introduction of foreign seed, nor even improvement in the mode of cultivation, that was required to make Indian tobacco a merchantable article, as a knowledge of the proper mode of preparing the leaf for market. The preparation is both a difficult and a delicate operation, but in its being successfully performed depends, up to 75 per cent. perhaps, of the value of the tobacco. I have seen tobacco which, when simply dried according to the common native way, would not fetch much more than a nominal price, that if properly prepared would have answered for cigar-wrapping

at ten shillings a pound. Tobacco leaf is more difficult to prepare than tea leaf, but what would be the value of even our best Assam tea if the natives had been left to their own devices to prepare it, if they had merely dried the leaf as it was picked, and had dispensed with all the processes of withering, rolling, and firing, which the European planter follows. I would most earnestly impress it upon the Government, that if it is sought to make Indian tobacco the staple it is capable of becoming, that attention should be exclusively directed *at first* to its improved manufacture. It would be worth while spending a good deal of public money to this end.

---

STATEMENT SHOWING PARTICULARS  
REGARDING CULTIVATION OF TOBACCO IN  
ASSAM.

Statement showing particulars regarding cultivation of Tobacco in Assam.

name of district and chief localities in the district of cultivation, with particulars of climate.	Approximate number of acres under cultivation during each of the last five years.	Average quantity produced per acre.	Cost of cultivation per acre.	Quality and prices of crop in different localities.	Method of cultivation, &c.	Method of curing adopted.	Quantity of tobacco exported, &c.	Results of notable experiments made with exotic seed.
<i>Kamroop.</i>	Acres.							
incipally in Mouzahs Uttar, Borokhettri, Puschim, Dhomoria, Lucki, Ramsha, Bogribari.	1868-69 ... 146 1869-70 ... 130 1870-71 ... 123 1871-72 ... 151 1872-73 ... 153	About 3 maunds.	Amount of revenue payable on land on which tobacco is grown, Re. 1 per beegha = Rs. 3 per acre. The Deputy Commissioner states that the ryot has no other expenses, which may be quite right, because it is only carried on as a home-stand cultivation occupying the ryot's leisure.	The tobacco grown in this district is inferior to the tobacco imported from Bengal, and the former is generally sold at 4 annas per seer.	Tobacco is grown in small patches near the village homesteads (high land). In September and October a nursery is formed and the seed sown broadcast, at the same time the land in which the plants are to be grown is manured and ploughed up some dozen times and reduced to dust. When the plants in the nursery have three or four leaves they are transplanted into the lands prepared for them in rows, and are covered with strips of plantain leaves. When the plants have ten or twelve leaves the land is hoed and weeded, and the sprouts or shoots are removed to secure all the nourishment in the plant for the leaves which are allowed to grow. Irrigation is not practised in the cultivation of tobacco, and the only manure used is cow-dung.	When the tips become dry (in April), the leaves are plucked and laid on the ground in the shade for a day or two, and then rammed down into a bamboo tube and hung up in the house, generally over a fire till required for use in the course of a month or two. The longer they are kept in this state the better they become. The edible tobacco is prepared in this way.	This district depends chiefly on Bengal for smoking tobacco. No tobacco is exported.	Experiments were tried in this district in 1869 with Virginia tobacco seed, and resulted in total failure.
rrung ...	About 250 acres are said to be under tobacco cultivation in this district at the present time. The Deputy Commissioner has not given the area under cultivation during the past five years; he has been asked to do so.	Ditto ...	Information not given, has been called for.	The fields are invariably in the immediate vicinity of the dwelling-houses or near a cowshed, and cow-dung is the only manure used. The usual spot selected for the nursery is the ground under the eaves of the house, and in one square yard of ground sufficient plants can be raised to cover more than an acre. The seed is at first sown broadcast in the nursery in August, and care is taken to keep the ground as dry as possible. In somewhat less than a month the young plants are ready for transplanting to the field, which has already been thoroughly manured at the beginning of the rainy season.  The transplants are planted in lines about two feet apart, and are covered during the day-time with strips of plantain bark. At the end of three days the strips are thrown aside, and fresh plants are brought	The leaves when stripped from the stem are rolled into bundles, which are enveloped in plantain leaves, and are then placed in a dry spot. At the end of three or four days they are removed, tied by the stalks in bundles of two or three leaves to a rope, and hung up inside the house or under the eaves. When fairly dry, the leaves are spread out on the ground for a day or two, and after this a few leaves are pounded down, their	Tobacco is not exported from this district, but Bengali tobacco is imported to some extent for smoking, the district tobacco being used for chewing.	None.	

Nowgong.	Acres.	Ditto ...	Not given, information called for.	The quality and price of a crop vary in different localities. The tobacco grown in the low alluvial soil of the district known as the Chapoorree meahs is considered the best. The value of tobacco prepared and preserved merely for chewing with betel-nut varies from 4 to 8 annas a seer, whereas the tobacco kept for smoking purposes does not exceed 2 annas. Tobacco imported from Bengal is preferred for smoking, it being better preserved.	from a nursery to supply the place of such as have not survived the transplanting. At the end of 15 or 20 days the land requires weeding; ten days after this the young leaves at the bottom of the stem are stripped off; the earth is then loosened, and cow-dung is placed round each plant. This is repeated twice at intervals of about a fortnight, by which time the root throws out suckers, which must be promptly removed, and at the same time the top of the stem is cut off. In February the leaves become slightly discolored, and are then stripped off. Their place is supplied by other and smaller leaves but no second crop is ever taken.	dust is mixed with water, and with this water the leaves are slightly sprinkled and are then placed in the baskets. This process is twice repeated, after this the leaves are tied up in bundles, which are wrapped in the sheath of the fruit of the soopari tree.	Information not given, has been asked for.	No exportations.	No experiments.
Only cultivated to a limited extent in this district for home consumption. A damp climate is considered the best.	1868-69 ... 800 1869-70 ... 1,800 1870-71 ... 1,000 1871-72 ... 1,900 1872-73 ... 1,700	Ditto ...	Not given, information called for.	The quality and price of a crop vary in different localities. The tobacco grown in the low alluvial soil of the district known as the Chapoorree meahs is considered the best. The value of tobacco prepared and preserved merely for chewing with betel-nut varies from 4 to 8 annas a seer, whereas the tobacco kept for smoking purposes does not exceed 2 annas. Tobacco imported from Bengal is preferred for smoking, it being better preserved.	from a nursery to supply the place of such as have not survived the transplanting. At the end of 15 or 20 days the land requires weeding; ten days after this the young leaves at the bottom of the stem are stripped off; the earth is then loosened, and cow-dung is placed round each plant. This is repeated twice at intervals of about a fortnight, by which time the root throws out suckers, which must be promptly removed, and at the same time the top of the stem is cut off. In February the leaves become slightly discolored, and are then stripped off. Their place is supplied by other and smaller leaves but no second crop is ever taken.	dust is mixed with water, and with this water the leaves are slightly sprinkled and are then placed in the baskets. This process is twice repeated, after this the leaves are tied up in bundles, which are wrapped in the sheath of the fruit of the soopari tree.	Information not given, has been asked for.	No exportations.	No experiments.

Statement showing particulars regarding cultivation of Tobacco in Assam—(Continued).

Name of district and chief localities in the district of cultivation, with particulars of climate.	Approximate number of acres under cultivation during each of the last five years.	Average quantity produced per acre.	Cost of cultivation per acre.	Quantity and prices of crop in different localities.	Method of cultivation, &c.	Method of curing adopted.	Quantity of tobacco exported, &c.	Results of notable experiments made with exotic seed.
<p><i>Sebsaungor.</i></p> <p>In every homestead a small quantity is cultivated on the land reserved as garden, each ryot raising what he considers enough for his own consumption.</p> <p><i>N.B.</i>—The report for this district has been furnished by Mr. Carnegie, the Assistant Commissioner of Jorehat.</p>	<p>Estimated to be about 140 acres at the present time.</p> <p><i>Note.</i>—This refers to Jorehat alone, and Deputy Commissioner has been requested to furnish figures for the whole district and for past five years.</p>	<p>About 8 maunds if a good crop.</p>	<p>Rs.</p> <p>Cost of seed and preparation of seed bed ... 5</p> <p>Labor of sixteen men for first and second hoeing ... 8</p> <p>Labor of eight men for third hoeing ... 2</p> <p>Labor of twenty men for manuring ... 5</p> <p>Manure for four weeding ... 10</p> <p>Fencing ... 20</p> <p>Plucking ... 20</p> <p>Rent of land ... 3</p> <p>Total ... 79</p>	<p>It is impossible to give any price-current for tobacco in different parts of the country. The average price of Assamese tobacco in the bazaar is 12 annas per seer. Bengali tobacco sells at about half that price.</p> <p><i>Note.</i>—The value of the produce of an acre would be Rs. 240.</p>	<p>Tobacco is grown as a garden and not as a field crop. The localities preferred are as high lying as possible and within the homestead fences. This land is never irrigated but it is well manured, partly by the occupants of the homestead themselves and also by a liberal supply of cow-dung. The soil is generally rich loam, and if with a light subsoil, so much the better.</p> <p>In the rainy season small patches of ground well in the shade are prepared as seed-beds. In August and September the seed is sown out in them. The young plants are allowed to stay in the seed-bed for about six weeks when they are taken up and planted in a permanent bed, which has been previously well hoed and manured. They are planted out in rows eighteen inches apart, with eighteen inches between each plant. While the plant is growing, it is generally weeded four times, and receives two or three top-dressings of cow-dung.</p> <p>In February and March the leaf is ready for plucking. The leaves are plucked singly from the stem which is then allowed to stand until the ryot chooses to dig it up to make way for something else. No more than one crop is taken from the plant, the owners considering the second growth of leaves as of no value.</p> <p>The tobacco plant thrives under the ordinary conditions of the Assam climate, but the moist heat serves I think to force growth and render the produce coarse, as compared with that grown in drier localities. The Assamese ryots generally use it for chewing with pán, for which it is well suited, but smokers prefer tobacco from Bengal, as</p>	<p>There are two methods of curing in practice. They do not differ very materially. By one method the leaf after being plucked is allowed to wither for about 24 hours, it is then well rolled with the hands on a stool or piece of board until most of the juice is expressed from it, this juice is carefully collected. After the leaf is considered sufficiently rolled it is put out in the sun, and while drying, damped from time to time with the juice collected during rolling. If the weather is clear the drying is completed in one day, otherwise more time is required. This is the best process, but takes more trouble than the second one which is commonly adopted.</p> <p>The second mode is to pluck the leaves and wither them as before described, then to put them into bamboo "choongas," and well ram them home with a rice pounder or other similar piece</p>	<p>No exportation.</p>	<p>No experiments.</p>

being milder than the Assam grown article, which they say is too strong.

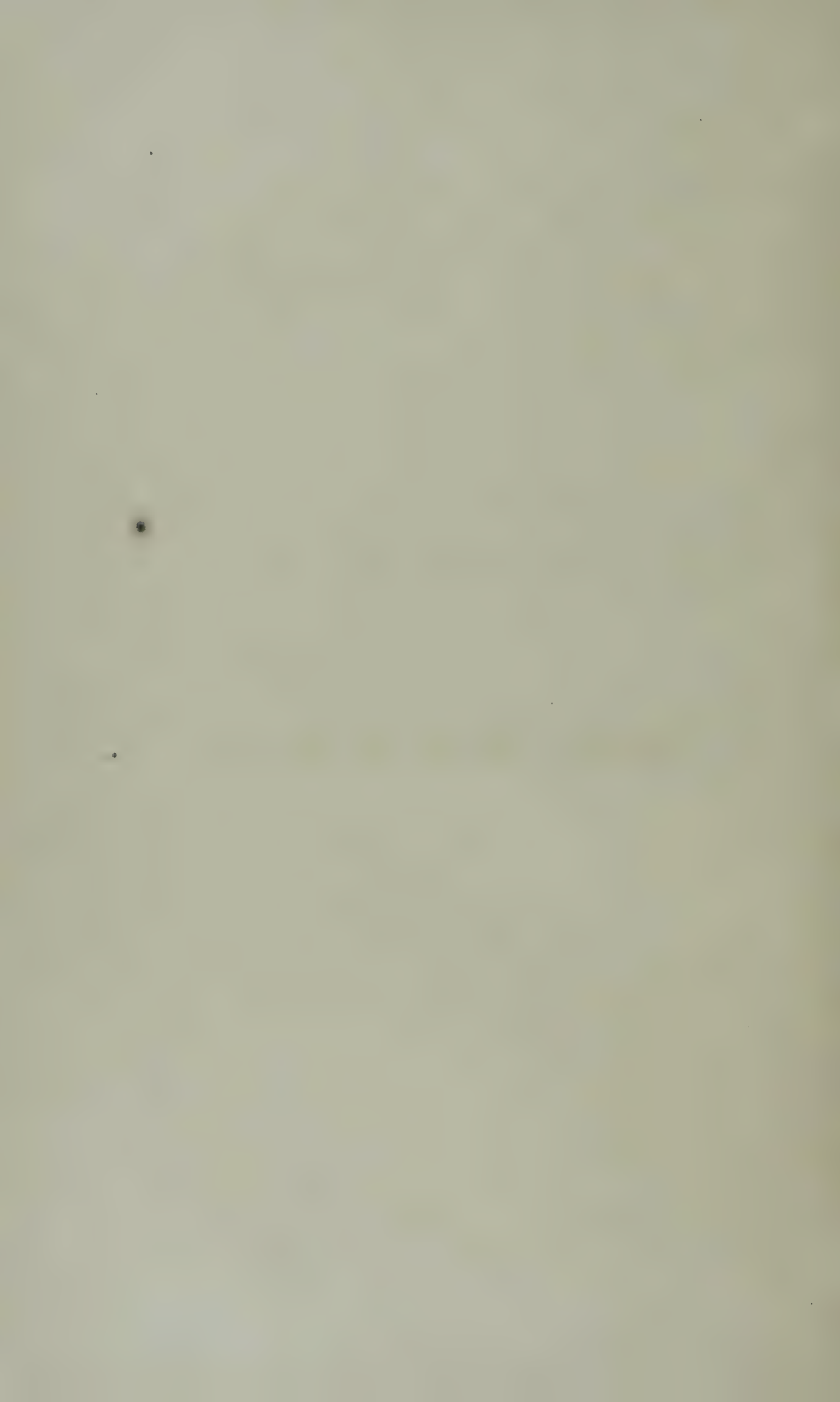
The tobacco plant grown in Assam is of two varieties which are distinguishable by the shape and colour of the leaves. One which is called Assam tobacco bears a large broad leaf of a rather dark-green colour. This is the kind chiefly grown, and it is apparently indigenous to the country. The other variety bears leaves of considerably lighter shade of colour, rather smaller, and narrower in proportion to their length than the common kind. This is called Burmah tobacco. As the name implies it must have been introduced from Burmah, but at what time I cannot ascertain, it was apparently, however, long before the Burmese invasion, which led to the province becoming British Territory, and the plant has now become thoroughly acclimatized. The produce of the Assam plant is considered the best of the two varieties.

of wood; after this they are allowed to stay in bamboos fermenting for three days, then taken out, twisted up, and dried in the sun.

HENRY HOPKINSON,

*Agent, Governor-General, N.-E. F., and*

*Commissioner of Assam.*



PART II.



TOBACCO CURING IN BENGAL.



## TOBACCO CURING IN BENGAL.

---

No. 683, dated Calcutta, the 26th December 1873.

Extract from the Proceedings of the Government of India, in the Department of Revenue, Agriculture and Commerce (Agriculture and Horticulture).

### READ—

A Report on the "Production of Tobacco in India," by Mr. J. E. O'Connor, Registrar, Department of Revenue, Agriculture and Commerce.

RESOLUTION.—This is the second of the series of monographs on the more important products of India, which it was proposed to compile in the Department of Revenue, Agriculture and Commerce.

The thanks of the Government of India are due to Mr. O'Connor for the compilation of this creditable report, which has been perused by His Excellency the Governor-General in Council with interest. The work, both as regards matter and arrangement, is in most respects a model of what such reports should be.

Copies of the report will be distributed to all local Governments and Administrations, who will be requested to favour the Government of India, at their early convenience, with their opinion on the measures discussed therein, and especially in chapter XIV, part II. His Excellency in Council desires to know whether they would recommend, with reference to the state of tobacco culture and the prospects of its improvement in each province, the importation of a skilled tobacco-grower and curer from Manilla, or elsewhere, to instruct the native agriculturists; and supervise, under the direction of Government, the introduction of a better system of cultivating, and more especially of curing, than at present obtains. His Excellency in Council will also be glad to be favoured with any other suggestions which the local authorities may have to offer on the subject.

Circular No. 14, dated Calcutta, the 12th May 1874.

From—R. KNIGHT, Esq., Assistant Secretary to the Government  
of Bengal,

To—All Commissioners and District Officers.

IN continuation of this office Circular No. 61, dated 6th September 1873, I am directed to forward herewith copy of a resolution of the Government of India, Revenue, Agriculture and Commerce Department, No. 683, dated 26th December 1873, together with the report therein referred to, on the production of tobacco in India, and to request that you will be so good as to favour the Lieutenant-Governor with any suggestions you may have to offer on the 3rd paragraph of the resolution.

# TOBACCO CURING IN BENGAL.

## BURDWAN DIVISION.

No. 320, dated Burdwan, the 8th October 1874.

From—C. T. BUCKLAND, Esq., Commissioner of the Burdwan Division,

To—The Secretary to the Government of Bengal, Financial Department.

WITH reference to your reminder No. 14A, dated 30th July last, for a reply to the Government circular No. 14 of the 12th May 1874, regarding the cultivation of tobacco in India, I have the honor to observe

From Burdwan, No. 438, dated 8th August 1874.

From Bankoora, No. 869, dated 11th August 1874.

From Beerbhoom, No. 258, dated 12th June 1874.

From Hooghly, No. 613, dated 13th August 1874.

From Howrah, No. 264, dated 22nd July 1874.

that the Government circular having been sent direct to the Collectors of the several districts in this division, all of them, except the Collector of Midnapore, have submitted their reports direct to Government, *vide* their letters noted in the margin.

2. The Collector of Midnapore reports that owing to the soil and climate of that district not being adapted to the growth of tobacco, its cultivation is confined to a limited area only, and the yield is inconsiderable. It is known that the district imports largely for its consumption, a fact which goes far to show that it is not a promising field for experiment. The chief localities of tobacco cultivation in this district are the banks of the Cossye, Soobunreeka, and other rivers, and Nagurachour, pergunnah Mandalghat, though inland fields in close proximity to villages are sometimes appropriated to the purpose. The tobacco grown in the district is generally of an inferior quality, and is entirely consumed in the district and used by the lower classes of the people. Mr. Harrison observes that the experiment in tobacco-growing districts would not improbably be productive of good results, but Midnapore hardly comes under this category.

No. 163, dated Jehanabad, the 15th July 1874.

From—BABOO GOUR DAS BYSACK, Deputy Collector of Jehanabad,

To—The Collector of Burdwan.

WITH reference to your circular memorandum No. 37, dated 6th ultimo, I have the honor to state that, in my opinion, the importation of a skilled tobacco grower and curer from Manilla or elsewhere to instruct the native agriculturists, and supervise the introduction of a better system

of cultivating, and more especially of curing, than at present obtains, will no doubt be attended with advantage to the production of the staple, and profit to the grower or others interested in the cultivation; but how far the native agriculturists will avail themselves of the benefit of education and carry their instructions into practice or modify their old antiquated ideas of cultivation, to which they have been addicted by immemorial custom, is more than I can conjecture at the present moment. As to the difficulties in the way it seems to me that one of the impediments to a successful dissemination of improved knowledge or to the introduction of a better system of cultivation will be at the outset an apprehension that may arise and spread that taxation is the object, the thin end of which has been but just introduced. Nevertheless it is absolutely necessary, in order to give the people an opportunity to compete in the development of a great resource, and to confer on the country a truly estimable boon, that an experiment should be made to improve the present system and prepare the way for the production of such tobacco as may with success compete with the Manilla or even Havana tobacco. I am not aware of any marked difference in the soil or its capabilities to make me apprehend any failure in this country of system that succeeds elsewhere. The tobacco already produced is no doubt capable of being so far improved as to suit the requirements of a demand for cigars, the consumption of which commands a much wider and more extensive market than the indigenous *goorook*, notwithstanding the *chillum* smoking propensities of the people of every condition, rank, and caste.

---

No. 438, dated Burdwan, the 8th August 1874.

From—E. H. WHINFIELD, Esq., Offg. Collector of Burdwan,

To—The Assistant Secretary to the Government of Bengal.

WITH reference to your circular No. 14, dated 12th May last, and reminder No. 14A, dated 30th ultimo, I have the honor to inform you that the tobacco cultivation in this district is very insignificant, being confined to a few places on the banks of the Bhagiruthee and Durkessur, and therefore, in my opinion, it is not worth while to go to the expense of importing a skilled tobacco curer for this district only. But if it be determined to import such an artizan for other districts where tobacco is more widely cultivated, such as Rungpore, some of the Burdwan tobacco might be submitted to his manipulation as an experiment.

2. I submit a letter from the Jehanabad Deputy Collector on the subject.

---

No. 869, dated Bankoora, the 11th August 1874:

From—W. R. LARMINIE, Esq., Offg. Collector of Bankoora,

To—The Secretary to the Government of Bengal.

WITH reference to your circular No. 14, dated 12th May last, I have the honor to state as follows:—

2. The extent of tobacco cultivation in this district is hardly sufficient to justify the employment of a Government curer or the like.

3. Should the scheme of curing Indian tobacco in other districts on improved principles prove a success, an exhibition of the results to the cultivators here and elsewhere would doubtless prove beneficial.

---

No. 258, dated Soory, the 12th June 1874.

From—R. D. HIME, Esq., Officiating Collector of Beerbhoom,  
To—The Assistant Secretary to the Government of Bengal.

I HAVE the honor to acknowledge the receipt of your circular No. 14 of 12th ultimo, and in reply, to state my opinion that experiments in tobacco culture, if carried on successfully on an extensive scale under the supervision of a skilled imported tobacco grower and curer, would probably have the effect of drawing the attention of capitalists to the subject; unless this result be obtained, or the cultivation and manufacture made a state monopoly as in France, no general improvement in these processes can be expected.

---

No. 1163, dated Midnapore, the 8th August 1874.

From—H. L. HARRISON, Esq., Collector of Midnapore,  
To—The Assistant Secretary to the Government of Bengal.

WITH reference to your No. 14A, of the 30th July last, I have the honor to say that the reply to the Government circular No. 14 of the 12th May last, was sent to the Commissioner of Burdwan Division on the 6th instant by this office No. 232. Copy is herewith submitted.

---

No. 232, dated Midnapore, the 6th August 1874.

From—H. L. HARRISON, Esq., Collector of Midnapore,  
To—The Commissioner of the Burdwan Division.

WITH reference to Government circular No. 14, dated the 12th May last, with enclosures, I have the honor to state that owing apparently to the soil and climate not being adapted to the growth of tobacco, its cultivation in this district is confined to a limited area only, and the yield is inconsiderable. It is known that the district imports largely for its consumption, an argument which goes far to show that it is not a promising field for experiment. The chief localities of tobacco cultivation are the banks of the Cossye, Soobunreeka, and other rivers, and Nageerachur, pergunnah Mundulghat, though inland fields in close proximity to villages are sometimes appropriated to the purpose. The tobacco grown is generally of an inferior quality, and is entirely consumed in the district and used by the lower classes of the people. The experiment in tobacco growing districts would not improbably be productive of good results, but Midnapore hardly comes under this category.

No. 613, dated Hooghly, the 13th August 1874.

From—F. H. PELLEW, Esq., Offg. Collector of Hooghly,

To—The Assistant Secretary to the Government of Bengal.

WITH reference to your circular No 14, of the 12th May 1874, I have the honor to report as follows:—

2. In the Hooghly district the cultivation of tobacco has attained some development in the tract included in pergunnah Bhoorsoot, which lies on the banks of the river Damoodur. An alluvial soil, enriched by the annual deposit of silt, is favorable to the growth of tobacco. In other parts of the district tobacco is grown in patches of 10 or 15 cottahs of land for the home consumption of the cultivators. I beg to append a note on the cultivation of tobacco in the Hooghly and Howrah districts, which has been kindly placed at my disposal by Baboo Joykissen Mookerjee.

3. The greater part of the tobacco grown in pergunnah Bhoorsoot is exported to Calcutta for sale, and the quantity left in the district is insufficient for home consumption, for which the people have to depend mainly on the tobacco imported from Rungpore, Purneah, and the adjoining districts of 24-Pergunnahs and Nuddea.

4. I am inclined to think that in a thickly-populated district like Hooghly, where in many parts there is always an intense demand for land for the cultivation of food-grains, there is little or no scope for the further development of tobacco cultivation than what it has already attained. To quote the opinion of Mr. Robertson: "suitable tobacco soils must be sought for in thinly-populated districts, where the natural fertility of the soil has not yet been permanently injured." The soils of this district have been under an exhausting system of cultivation for a long series of years, and hence there is, I think, a natural impediment to the growth of tobacco suited for the European market in the whole of the districts, excepting, perhaps, a small strip bordering on the Damoodur.

5. I beg to state here that about 20 years ago the manufacture of cigars was carried on in a flourishing scale in the town of Chinsurah and the adjoining localities. There were no less than five European and East Indian firms and as many native firms engaged in this branch of industry in Chinsurah and Chandernagore. The cigars enjoyed a European reputation, and were largely exported to Europe and Burmah for sale. The exports to Europe have now ceased altogether, while cigars manufactured in Burmah from Rungpore tobacco are now imported to Calcutta, and find a ready sale in Bengal.

6. At present the manufacture of cigars has ceased altogether in Chinsurah, but there are four manufactories on a small scale in Hooghly and Chandernagore under the superintendence of natives, where cheroots are made in imitation of Manilla, Havana, and Burmah cigars. The cigars being mere imitations are called "gilt" cheroots. The inside of the so-called Manilla and Havana is made of Rungpore tobacco leaf while the outer coating is made of the more costly leaf imported from China *via* Calcutta. The Burmah cigars were formerly made from Burmah tobacco as well as from Rungpore and China leaf

like the Manilla and the Havana, but they are now made entirely of the Rungpore leaf owing, it is said, to the costliness of Burmah tobacco, and the demand for them is said to have been very much decreased of late.

7. The Rungpore tobacco is imported to Culnah and thence to Calcutta. It is imported to Hooghly from Calcutta, and is purchased at the price of Rs. 5-8 per maund. The China tobacco is purchased in Calcutta at about Rs. 38 per maund.

8. Each description of the cigars manufactured is again divided into two classes, No. 1 and No. 2, according to its size. Eight seers of Rungpore and two seers of China tobacco are required in manufacturing 1,000 Havanas, and the same quantity of Rungpore and  $1\frac{3}{4}$  seers of China tobacco, in preparing 1,000 Manillas. The cost of preparing the Havanas and Manillas is Rs. 4-14 and Rs. 4-6 per 1,000 respectively. The selling price of the Havanas and Manillas is, respectively, Rs. 7 and Rs. 6 per 1,000. The imitation Burmah cheroots are sold at Rs. 4 or Rs. 5 per 1,000. The value of the cigars exported from the district amount to about Rs. 2,000 per annum. The cigars are exported to Calcutta and thence exported by up-country merchants to Delhi, Cawnpore, Jubbulpore, Furruckabad, Lucknow, and other places. The cigars are also purchased in Calcutta by ship captains for consumption *en route* to Europe, and by Bengali Baboos, Chinamen, Jews, and East Indians.

9. I beg to submit herewith specimens of the cigars as manufactured in this district, together with those of the leaf from which they are made.

10. It appears to me that the decline in this branch of industry at Chinsurah is attributable not to deficient skill of the manufacture, but to the want of country tobacco suited to European taste. The difficulty lies in producing good tobacco and in curing it properly. Taking the requirements and peculiarities of the several districts of Bengal into consideration, I am of opinion that the services of a skilled tobacco grower and curer from Manilla will be of great benefit in those districts, *e.g.*, Rungpore and Purneah, where tobacco is grown on an extensive scale, and from which it is a staple article of export. As already stated, in an over-populated district like Hooghly it appears to me that the cultivation tobacco is not susceptible of further development, and I do not think therefore that any special agency is required in this district.

NOTE. "Tobacco is chiefly cultivated in the villages situated on both banks of the Damoodur, from Shamnuggur in the south to Sodepore in the north, and specially in that portion of pergunnah Bhoorsoot which lies within the district of Howrah. Bhoorsoot tobacco is a name as common in the district as Hingli and Munnipore tobacco, and it has a mild flavour which distinguishes it from other varieties and makes it extensively used. In the manufacture of the richer description of *goorook* tobacco is grown in several other villages in the Hooghly district, but in very limited quantities, and for the exclusive use of the cultivators themselves. A rich alluvial soil, consisting of an admixture of clay and sand, and the convenient situation of the lands with respect to means of irrigation are the only peculiarities of climate which favor the cultivation of tobacco in pergunnah Bhoorsoot.

2. There is no data to determine the different quantities of land cultivated with tobacco during the last five years; but taking the length of the area along the banks of the Damoodur to which the cultivation extends, I think that from 10,000 to 12,000 acres is the approximate area in which tobacco is cultivated every year in pergunnah

Bhoorsoot, situate in the districts of Hooghly proper, and Howrah, and in the Jehanabad sub-division of Burdwan.

3. The average quantity of tobacco produced per acre may be estimated at 30 maunds.

4. The following is the ordinary cost of cultivation per acre :—

				Rs.	A.	P.
Ploughing and hoeing	...	...	...	7	8	0
Manuring	...	...	...	2	0	0
Cost of $1\frac{1}{2}$ seers of seed	...	...	...	0	12	0
Transplanting	...	...	...	6	0	0
Weeding	...	...	...	3	0	0
Weekly chopping off the tops of the plants	...	...	...	9	0	0
Cutting the crop	...	...	...	4	8	0
Second cutting of the crop	...	...	...	2	4	0
Curing	...	...	...	3	0	0
Total				38	0	0

5. The Bhoorsoot tobacco sells from Rs. 6 to Rs. 10 per maund, according to the quality of the article. The average price may be stated to be Rs. 8 per maund.

6. The Soona Aol or high land having a *doash* soil, *i.e.*, a mixture of clay and sand, is preferred for tobacco cultivation. The seeds are first sown in seed beds in the beginning of Assin (middle of September), and the seedlings are allowed to grow in the beds for one month, after which, that is, in the beginning of Kartic, they are transplanted in the fields on lands which have been ploughed and hoed. The seeds are never sown broadcast in the fields, where they are always destroyed by insects. After the plants have been transplanted, if there is a timely fall of rain within a week or two, there is no need of irrigation, otherwise, the fields are irrigated once within that time. There is no further need for irrigation, and the crop suffers if there is excess of rainfall. The only manures used are ashes and the refuse of cowsheds. The tops of the plants are chopped off once every week with a view to make the leaves larger and thicker. The crop is cut in the end of Pous (middle of December) by cutting down the stems, but from the stumps that are left in the ground, fresh leaves come out, and a second, but much inferior crop, is reaped.

7. The leaves with the stems are left in the fields after they are cut, and allowed to remain there in parallel rows for one week, unless there is fear of a fall of rain, in which case they are removed from the fields earlier. The leaves are then separated from the stumps and chained to a rope in small bundles, and hung up to dry in a shady but well ventilated place. All tobacco growers have sheds specially erected for the purpose. After the leaves are dry they are fit for manufacture or exportation. Some cultivators try to improve the colour of the leaves by smoking them, and with that end fill the sheds with smoke while the leaves are hung up to dry.

8. The Bhoorsoot tobacco and the tobacco which is grown in other villages on the banks of the Damoodur is exported to Calcutta for sale. The quantity and value of the export may be approximately estimated from the answers to queries 2, 3, and 5.

9. I was kindly furnished by the Magistrate of Hooghly with about a dram of Virginia tobacco seed for experimental cultivation in 1870-71. In 1870 it was a case of total failure, as in all the three villages in which the experiment was made, the seeds were destroyed by ants. In 1871 the result was the same; but in 1872 I succeeded, with proper precautions, in getting eight or nine plants in Ooterparah from fresh seeds supplied to me. Owing, however, to the ignorance of my man to cure the leaves in a proper manner, the tobacco was not so superior as was expected. One of the plants, which was reserved for the purpose, yielded about an ounce of seed, and with that seed I have made the experiment again this year. In consequence, however, of the seeds having been sown at about the end of the cold season, the crop has been just cut, and I hope to get the leaves cured this time in a proper manner.

The 1st July 1874.

(Sd.) JOYKISSEN MOOKERJEE.

No. 264, dated Howrah, the 22nd July 1874.

From—J. B. WORGAN, Esq., Offg. Covenanted Depy. Collr. of Howrah,

To—The Assistant Secretary to the Government of Bengal.

I HAVE the honor to acknowledge the receipt of your circular No. 14, of the 12th of May 1874, which reached me on the 20th idem.

2. Some delay has arisen owing to the fact that, before replying, I desired to have the opinion of the officer in charge of the newly-established sub-division of Mohesreekha, which contains the five southern and western thanas of the district, and within which most of the tobacco cultivation that there is in this district lies. Through a blunder and great dilatoriness on the part of the sheristadar, Mr. O'Connor's report and the original circular No. 61 of September 6th, 1873, were not communicated to the Deputy Collector till a month afterwards, and his reply did not reach me till the 16th instant.

3. I find that there is a good deal of correspondence on the subject of the tobacco cultivation of the district in the office, and that a report was submitted to the Commissioner by Mr. D'Oyly in July 1873, made after considerable enquiry.

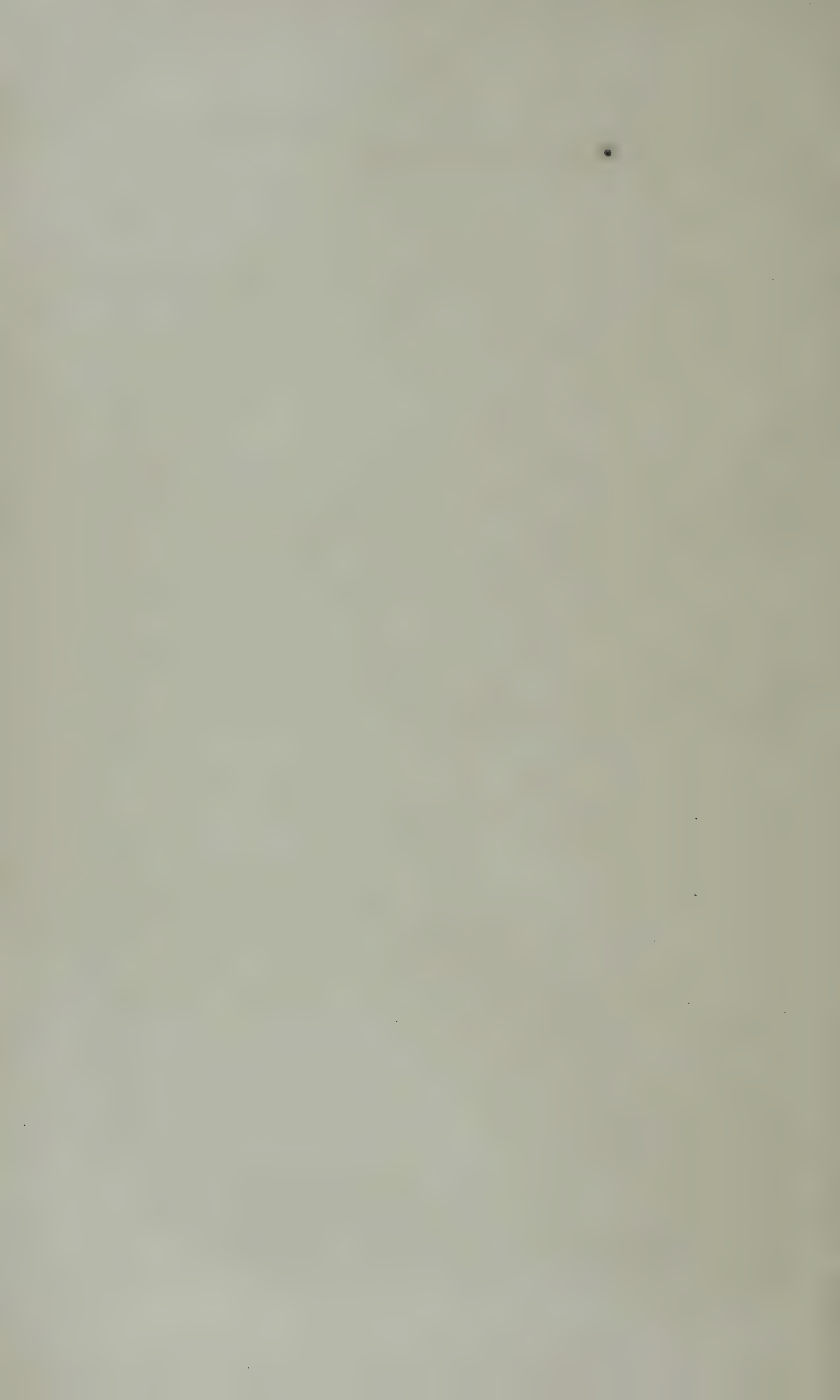
4. In that report Mr. D'Oyly showed that the extent of the cultivation was exceedingly small. In fact, he stated that he did not think that there had been more than 50 or 60 acres under tobacco during the previous five years.

5. The sub-divisional officer's report goes to show that this state of things still continues. The district is not what would be called a tobacco-growing district, though the little that is grown seems to be considered of good quality.

6. I have read through Mr. O'Connor's exhaustive and interesting report, and I have no doubt that were the cultivators more skilled in the treatment of their tobacco when grown, it would command a sale in the European market, which it at present fails to do. His idea accordingly of employing a skilled curer seems an exceedingly practical one, wherever sufficient scope for the operations of such a person may exist. Probably the best field at first for such a man to work in would be a Government farm, or a Government estate, in a really good tobacco district, such as Rungpore or Purneah, where he could supervise the cultivation of the tobacco and exercise entire control over its curing. He might also purchase the raw material from the best growers on the spot, and see what difference really good curing made in the quality of the manufactured article.

7. I do not think, however, that in *this* district any sufficient field of the kind above referred to exists, and I think that it would be premature to take any steps in the matter until a much larger extent of cultivation shall be found to exist than there appears to be at present.

8. I ought to note here that since Mr. D'Oyly wrote his report the thana of Khanacool has been added to the district, and that this thana is said by the Deputy Collector of Mohesreekha to have more tobacco in it than any of his other thanas. Even there, however, the cultivation is not extensive, and seems to be confined to the banks of Damoodur river, as in the thanas south of Khanacool.



## PRESIDENCY DIVISION.

---

No. 29M.A., dated Calcutta, the 12th June 1874.

From—LORD H. ULICK BROWNE, Commissioner of the Presidency Division,  
To—The Secretary to the Government of Bengal.

WITH reference to Government circular No. 14, dated 12th May 1874, forwarding a copy of a resolution of the Government of India, No. 683, dated 26th December 1873, on the production of tobacco in India, and calling for a report on paragraph 3 of the same, I have the honor to state that, under the present feelings of prejudice with which the agriculturists of this country regard any suggestion as to changes in their systems of agriculture, I think it would be a waste of time to spend money in importing skilled tobacco growers and curers from America and the Phillipines, but that whenever Government experimental farms on a large scale are established under scientific English and continental agriculturists, then I would import skilled tobacco men.

2. My idea is that the natives would not follow the advice given them until they could see with their own eyes marked results actually obtained. And these could, I think, only be obtained under such favorable circumstances as I have suggested. I do not think that any good would be effected by importing skilled tobacco men to fritter away their time by growing small patches of tobacco in jail gardens.

---

No. 627, dated Alipore, the 20th July 1874.

From—F. B. PEACOCK, Esq., Collector of 24-Pergunnahs,  
To—The Secretary to the Government of Bengal.

WITH reference to Government circular No. 14, dated 12th May 1874, forwarding for report copy of a resolution of the Government of India, Revenue, Agriculture, and Commerce Department, No. 683, dated 26th December 1873, on the production of tobacco in India and the prospect of its improvement, I have the honor to state as follows :—

2. As I have already reported, the 24-Pergunnahs is not a large tobacco growing district, and what is produced is for the most part of very inferior quality ; but I imagine that the defects in the method of cultivation, and more particularly of curing, which are known to exist here are found in a greater or less degree in every tobacco producing district in the country. It seems to me therefore that the first thing to be done is to remedy these defects, and that until we do so the experiments which are from time to time made with Havana or Virginia tobacco will be of little real use. Having learnt to cultivate and how to cure tobacco generally it will doubtless not be a very difficult matter to introduce such modifications either in the one or the other as experience may show to be most conducive to the production of any particular variety. It seems to me, therefore, that what is chiefly wanted

is some *general* instruction in the cultivation of tobacco, rather than particular instruction in the cultivation of any given variety, and in this respect no doubt the services of skilled growers and curers of tobacco would be invaluable. It will be necessary, however, to introduce them cautiously. The ryots are as a class not only very conservative and opposed to change, but they are also most suspicious, their suspicions usually taking the form of a vague dread of increased taxation whenever anything occurs to arouse them. Care must therefore be taken lest in our endeavours to do good we do nothing to place the ryots in antagonism to us, or to arouse suspicions that may not be easily allayed. I am inclined to think that the establishment of a tobacco farm, if sufficient suitable ground could be found in or near any one place, would be as good a way of making a commencement as any. The farm need not of course be exclusively for the growth of tobacco if land were obtainable in its neighbourhood suited to other crops. I should think in plenty of places in Behar there would be no difficulty in getting exactly what was wanted.

The land should be cultivated by means of hired laborers, superintended by a staff (small or large according to the quantity of land) of skilled tobacco growers, English or American being preferred, as being the most capable of keeping the laborers up to their work. No laborer should be retained beyond the time sufficient for a man of ordinary intelligence in that class to make himself practically acquainted with the art of cultivating and curing tobacco. His place should then be at once filled by someone else, either from the same or some other district. If the plan after a year or two's trial become popular, other similar farms might be established in different parts of the country, or endeavours might be made through the collectors to get the more enlightened zemindars in each district to send up one two or more of his ryots to serve for a time on the farm sufficiently long for them to become acquainted with the proper mode of cultivation, and to be able to impart their knowledge to others. As Government would of course pay them an ordinary day laborer's wages in return for their work, there would only be the cost of their journey to and from the farm which need not in these days be very great. I should think that in every tobacco growing district some few zemindars at all events would be found sufficiently liberal to pay any small sums that would be required on this account in consideration of the advantages they would derive by the introduction of a better system of tobacco cultivation into their estates. When once an introduction was effected into a district it would very soon spread over it; more particularly if the estates from which the ryots were taken for instruction on the farm were not contiguous. Such is a rough sketch of a scheme which I think might be tried with more chance of success than the mere importation of skilled tobacco growers into particular provinces or particular districts. On a farm they as well as the ryots would be under some supervision, and their work could be ascertained from day to day or from week to week, which could not be done if they were located on particular estates and removed from all control. There would be less chance too of the ryots getting erroneous notions as to the object of their mission, a matter, in my opinion, of great consequence.

No. 488G, dated Kishnaghur, the 20th June 1874.

From—C. C. STEVENS, Esq., Collector of Nuddea,

To—The Secretary to the Government of Bengal.

IN reply to your No. 14, dated 12th ultimo, I have the honor to state that, in my opinion, the importations of the product and the probability of success in improving it, would justify Government in incurring considerable expense in endeavouring to teach better methods of cultivation and of causing them than at present in use.

2. Nothing, it seems to me, is likely to be gained by mere desultory experiments; a special establishment of exports should be employed.

3. It would be best to undertake operations at first in some one or more localities in which there is already an extensive tobacco cultivation. This district would not be unfavorable for the purpose, since a considerable extent of tobacco is grown for export in the sub-divisions of Bongong and Ranaghat. Most of this is "Hingli" tobacco (so named from a village particularly celebrated for its tobacco), and I believe is considered as good as any in Bengal.

---

No. 170, dated Jessore, the 11th August 1874.

From—A. SMITH, Esq., Collector of Jessore,

To—The Secretary to the Government of Bengal.

WITH reference to Government circular No. 14, of the 12th May, it would, I should think, be a very judicious step and one quite within the bounds of the aid Government is expected to give in the experimental stage of industries which, though likely to be eventually beneficial, have not reached the point at which private speculators are willing to do what is needed, from the hope of profit, to import a skilled grower and curer to superintend and instruct in the art of growing and to direct experiment towards ascertaining the modes of growing and curing best suited to the climate.

One or two experimental gardens might be constructed in different parts of the country under his control, and small experiments might be made in the jail gardens of different districts by the superintendent of the jails acting under his instructions.



## RAJSHAHYE DIVISION.

---

No. 35Ct., dated Camp, Rungpore, the 9th September 1874.

From—E. W. MOLONY, Esq., Commissioner of the Rajshahye Division,

To—The Secretary to the Government of Bengal.

WITH reference to your No. 14 circular, dated 12th May last, requesting a report on the improvement of the growth of tobacco in India, I have the honor to state as follows:—

2. In this division tobacco is not grown on any extensive scale except in Rungpore, Dinagepore, and a part of Rajshahye, the soil not being suited to its growth. What little is grown is for home consumption only, consequently the cultivators in districts where the growth is limited would pay little attention to the directions of a skilled tobacco grower and curer.

3. The Collector of Dinagepore, where tobacco is extensively grown, has submitted his report direct to Government in his No. 12, dated 16th July last. He is of opinion that the crop as now grown finds ready sale in the market, and, as a matter of course, the hope of in time obtaining a better price for the produce will not induce the cultivators to make any change in their usual manner of cultivation.

4. The Collector of Rajshahye has also submitted his report direct to Government in his No. 2281, dated 25th August last. I do not, therefore, give here an abstract of his opinion. I doubt, however, whether the cultivators of his district would, as stated by him, gladly attend to the instructions for curing, &c., if they could be shown that by a little more expenditure of money and care a larger profit could be obtained.

5. I submit herewith the reports received on the subject from the Magistrate of Rungpore. I agree with the Civil Surgeon of the district, whose report the Magistrate has forwarded, that knowledge may be more thoroughly diffused by the means described by the Civil Surgeon than by sending a foreigner, however well skilled in curing the plant, to personally propagate his ideas.

---

No. 186, dated Rungpore Jail, the 12th August 1874.

From—BABOO K. D. GHOSE, M.D., M.B.C.S., Superintendent of Rungpore Jail,

To—The Magistrate of Rungpore.

WITH reference to your memorandum No. 97, of the 1st June last, I beg to report that the experiments I am carrying on now in the jail garden regarding the cultivation of tobacco will not be completed in less than four or five years, and I am sorry to say that other questions, such as overcrowding, excessive sickness and mortality, so much occupied my time and attention that I could not devote as much time in the garden as I wished. The experiments therefore with tobacco did not make much

progress. One point, however, has been clearly proved by the results of the last season, that the quantity of yield increases in proportion to the quantity and quality of manure used.

The maximum produce per acre of any variety of tobacco that has yet been grown by the ryots, and they use as much manure as they can find, is 15 maunds; but by the free use of four different varieties of manure, I obtained 16 maunds of the leaf from two-thirds of an acre.

This result was due chiefly, I believe, to the manuring of individual plants which I resorted to for the sake of economy. I at first made the ground as rich as I could by a liberal admixture of manure, and when the plants extended their roots and attained some vigor, I placed 16 inches, all round each plant, about two inches of well-rotted manure and then watered it. This process was repeated at regular intervals, and the result could be plainly seen; soon after each repetition of the process the leaves enlarged and thickened most wonderfully.

In order to ascertain the value of each of the four varieties of manure, viz., night-soil, indigo-sitee, horse-dung, and cow-dung, I did not mix them in the same piece of ground. I divided the piece of ground into four equal parts, the original richness being the same in them and manured each plot with an equal quantity of each of the four manures. The individual manuring was also done with the same material as was used for enriching the ground, and from the yield their value appeared to be in the following order:—

1. Night-soil.		3. Horse-dung.
2. Indigo-sitee.		4. Cow-dung.

I intend, during the next season, to take a fifth plot and try all the four kinds of manure used together. I intend also to mix in each of the five a quantity of wood ash.

From want of proper sheds I could not introduce foreign methods of curing, but I hope to be able to do that this year.

I put down some Havana seed which I obtained from the Secretary to the Agricultural and Horticultural Society in Calcutta. Only a very few germinated, and I could not get more than four healthy plants, which I left for seed. This year I will use this acclimatized seed and observe the result.

This is the third time American seed failed in the jail garden. On the first two occasions they did so utterly, and on the last four healthy plants were obtained. This year I have written for some more imported seed to see if they will give better results with the American arrangement of the nursery.

---

No. 288, dated Rungpore, the 14th August 1874.

Memo. by—E. G. GLAZIER, ESQ., Officiating Magistrate, Rungpore.

COPY forwarded to the Commissioner of the Rajshahye Division, with reference to Government letter No. 1478, dated 27th May 1874.

No. 320, dated Rungpore, the 12th August 1874.

From—BABOO K. D. GHOSE, M.D., M.R.C.S., Supdt. of Rungpore Jail,  
To—The Magistrate of Rungpore.

WITH reference to your memorandum No. 707 of the 18th ultimo, and enclosures, I beg to report that, as Mr. O'Connor himself says, "the real improvement of an old industry like tobacco seems to be with private capitalists rather than with Government," it will take a long time for the ignorant ryot of these districts to outgrow the time-honored ideas regarding their chief concern, agriculture, and any direct teaching by foreign growers and curers of tobacco will be looked upon with suspicion. Yet there are various ways in which the British Government, by well directed efforts, can indirectly influence the masses. Although much improvement can be made in growing, the chief reason why the tobacco grown in Rungpore is not acceptable in Europe is because it is not properly cured. It is not that any pains are spared in the process, but the right process is not known, and even when it will be known, its expense will come in the way of its general adoption. Two things, therefore, must be done in order that people may be made to change the method of curing the tobacco they grow. The right method must be taught simultaneously with the opening up of an improved market for the disposal of their improved produce to cover the additional expense.

1st.—To teach the ryot, an imported grower and curer will be of little or no use. He will not know how to get at the people, and the people, who hardly ever go two miles beyond their home, will not approach him. The means of diffusion of knowledge should therefore be the zemindars and jails. Directions for growing and curing should be published in simple Bengali and distributed among the ryots through zemindars, and large plots of ground should be taken in by the jails in the tobacco-growing districts. About half a dozen of agricultural prisoners should be selected at a time from each of the thanas where tobacco is grown, and employed in cultivating and curing it; thus will they be practically initiated in the improved methods of growing and curing. Batch after batch of instructed men will thus return among the people to diffuse a knowledge which no direct teaching could impart. The jails have luckily the services of scientific men, who, if willing, can easily work up the thing to the highest possible perfection, and if they can be made to give time and trouble the prisons will be of great use in developing such branches of industry as the people are already employed in. New arts, like carpentry or weaving, may not be followed by a prisoner when he returns home, but he will naturally follow, after his release, the occupation he followed before coming to jail, and in so doing he cannot help working with the convictions he attained while a prisoner.

The present jail gardens, their scope and establishment, will not permit of any such large object; money must be laid out in land, implements, manures, and paid overseers (at least until proper convict overseers are trained up). In the experiments I am carrying on now I find those difficulties in my way. The present jail garden is hardly

large enough to grow the fresh vegetables required for prison use; better ploughs and bullocks than the jail have at present must be obtained for the deep cultivation which tobacco requires.

2nd.—Government must come and precede the exporter in finding the grower an adequate return for his improved produce, either by exporting some of the best tobacco grown or by holding up rewards for the best samples produced. Rewards by exhibitions do not reach the real grower. Proclamation of such rewards should be given by the police to the ryots who will send to the Magistrate any good tobacco they can grow and receive their rewards from the district officer.

In conclusion, I beg to say that if the Government approve of my proposal of publishing the directions for improved cultivation, I shall be happy to compile and render into plain Bengali passages from the appendix of Mr. O'Connor's report for the purpose.

---

No. 207, dated Rungpore, the 14th August 1874.

Memo. by—E. G. GLAZIER, Esq., Officiating Magistrate of Rungpore.

Copy forwarded to the Commissioner of the Rajshahye Division, with reference to Government circular No. 14, dated 12th May 1874.

---

No. 120, dated Berhampore, the 20th June 1874.

From—W. WAVELL, Esq., Offg. Collector of Moorshedabad,

To—The Commissioner of the Rajshahye Division.

WITH advertence to your No. 126 circular, dated 22nd May 1874, I have the honor to inform you that, as stated in my former report on the subject of tobacco, No. 203, dated 19th July 1873, the cultivation of this plant is conducted on so insignificant a scale in this district that it would, I think, be useless to adopt the measure suggested in paragraph 3 of the resolution of the Government of India.

2. Tobacco is grown almost throughout the district, but on a very small scale and almost entirely for purely local if not personal consumption, and though the mode of cultivation, and still more of curing the leaf, might doubtless be improved by the instructions of a skilled grower and curer of tobacco (if his instructions were attended to), yet, as none of the tobacco finds its way into the European market, it would seem that the benefit to be derived would not justify the expense.

3. If the scheme of having a model farm at Berhampore had been carried out, it was my intention to have cultivated various kinds of tobacco in the hope of gradually improving its cultivation in the district generally; and I am of opinion that if a model farm be ever established it would be very desirable that an experienced grower and curer from Manilla should be sent, for a short time at any rate, to supervise the cultivation and curing of the plant.

---

No. 248, dated Berhampore, the 11th September 1874.

Memo. by—W. WAVELL, Esq., Officiating Collector of Moorshedabad.

Copy forwarded to the Secretary to the Government of Bengal, with reference to his No. 2496, dated 29th August 1874.

No. 12, dated Dinagepore, the 16th July 1874.

From—E. E. Lowis, Esq., Collector of Dinagepore,

To—The Secretary to the Government of Bengal.

With reference to your No. 14 circular, dated 12th May last, I have the honor to report that I do not consider the importation of a skilled grower and curer into this district would lead to any practical improvement in the quality of tobacco manufactured.

Tobacco is grown here to a considerable extent and the crop, as now manufactured, finds a ready sale; the hope of in time obtaining a better price for the produce, therefore, will not induce the cultivators to make any change in their usual manner of cultivation. Indian tobacco not being quoted in the market it would take time to bring its qualities into notice, and even though success may be certain it is not to be expected that the cultivators will take the trouble and incur the necessary expense in the hope of reaping a good profit hereafter. To embark on such an undertaking requires both enterprize and capital, with neither of which is an ordinary villager over-burdened. It is not enough that the cultivation be carefully carried out: the most carefully-grown tobacco is valueless unless properly cured, and in order that it may be properly cured drying-houses must be erected. Tea and cinchona cultivation have been introduced with success, but these industries have been established, not by the villagers themselves, but by European energy and capital combined. Government must take the initiative if the scheme is to be carried out, and by means of model farms show the ryots what profits may be expected from this cultivation properly carried on; but even then, I do not see how the ordinary villager, without capital at his command, is to incur the expense of putting up drying-houses.

---

No. 336, dated Maldah, the 9th August 1874.

From—F. WYER, Esq., Officiating Collector of Maldah,

To—The Secretary to the Government of Bengal.

In answer to your No. 14A, dated 30th ultimo, I have the honor to refer you to this office, No. 200, dated 27th June 1874, to the address of the Commissioner of the Rajshahye Division, a copy of which is, however, enclosed.

---

No. 200, dated Maldah, the 27th June 1874.

From—F. WYER, Esq., Officiating Collector of Maldah,

To—The Commissioner of the Rajshahye Division.

With reference to circular No. 14, of the Bengal Government, dated 24th of May, asking for certain information about the culture of tobacco, I have the honor to report that tobacco cultivation is carried on to a very limited extent in this district, and the tobacco grown is

grown for home consumption ; so that I think that the native agriculturists would hardly trouble themselves to attend to the directions of a skilled tobacco grower and curer. I am more convinced that this is the case since the land best suited for tobacco is taken up in this district in the cultivation of mulberry, and this is so profitable a crop that the ryots would not give up a crop which was nearly sure to pay them well, in expectation of larger but more uncertain profits.

2. I think that a few plain directions about the growth and curing of tobacco might be printed in Bengali, and copies sent out to all the pathsalas. Thus, ryots might, perhaps, be induced to try a new method, and if they found the new method more profitable than the old, they would most readily adopt it.

---

No. 2281, dated Beaulah, the 25th August 1874.

From—W. H. D'O'LY, Esq., Collector of Rajshahye,

To—The Assistant Secretary to the Government of Bengal.

WITH reference to your circular No. 14, dated 12th May last, I have the honor to report as follows:—

In the north of this district a considerable quantity of tobacco is grown, though not in sufficient quantities to supply the wants of the whole district, for during the months of March, April, and May, tobacco is largely imported from Monghyr, Purneah, and Rungpore. The quality of the tobacco grown in the north of the district is about equal to that of the plant grown in Rungpore. There are two quite distinct kinds—one, the ordinary variety of *Nicotiana tabacum*, which the natives call “Belaitee,” and the other a smaller variety with smaller and somewhat curled leaves, this the natives call “Hamakoo,” evidently the same as the species similarly named in Rungpore, and noticed at page 53 of Mr. O'Connor's report, though the leaf of the species which I have myself seen in this district is not by any means like an “oak leaf” except in its curly habit. The flower is almost white. The produce is stronger than that of the ordinary *Nicotiana tabacum*.

There is no doubt that by the importation of skilled tobacco curers from Manilla or America, natives might be taught to manufacture an improved article. The question is, whether the natives would to any extent attempt, by greater care, by increased expenditure, and by following the instructions of a competent curer, to manufacture a tobacco that would be appreciated in England, and by English consumers in India. If they could be shown that by a little more expenditure of money and care and by following instructions in the art of curing, they could secure a larger *profit*, then they would certainly be glad to take advantage of such instruction. But it must not be lost sight of, that natives by their present mode of cultivation and by their undoubtedly imperfect system of curing tobacco, can produce an article that pays them sometimes as much as 300 per cent. on their outlay. In Tirhoot I have always heard that from Rs. 80 to Rs. 100 per beegha, is made by tobacco cultivation. I can state, however, as a fact, that Captain Farquhar at Poosah cultivated four beeghas with tobacco. He was offered Rs. 400 for

the plant as it stood before manufacture, and I believe the cost of cultivation was less than Rs. 25 per beegha: the beegha there, I believe, contains 27,225 square feet. Producers may get a higher price for an improved article, but will not the extra expense necessary to produce such an article counter-balance the extra price? Will the actual *profit* be greater?

The native consumer is satisfied with the inferior article produced in his country, and the producer, who gets a larger *profit* than he can from any other crops, will remain satisfied with his profit until we can show him that he can make a larger profit. This is what we must show him, it is not sufficient to show him that a better *price* can be got for a superior article; and the only way to show him this is by practical instruction by ocular demonstration. I would certainly recommend the importation of skilled cultivators and curers of tobacco—one for each of the most important tobacco producing parts of the country; but it must not be forgotten that these instructors must not be satisfied with producing superior tobacco, they must secure a larger profit than the native producer, with his rude style of manufacture, is able to gain. Agricultural shows with prizes would also induce the cultivators to try and improve the quality of their produce.

Instruction in the jails of districts where tobacco is largely cultivated would no doubt have a good effect.

---

No. 209, dated Bogra, the 8th August 1874.

From—E. J. BARTON, Esq., Officiating Collector of Bogra,  
To—The Assistant Secretary to the Government of Bengal.

WITH reference to your No. 41A, of the 30th ultimo, I have the honor to state that the report called for in the Government No. 14, dated 12th May 1874, has already been submitted to the Commissioner of the division with reference to his memorandum No. 126 circular of the 22nd May 1874. A copy of the report is herewith enclosed.

---

No. 137, dated Bogra, the 7th July 1874.

From—E. J. BARTON, Esq., Officiating Collector of Bogra,  
To—The Commissioner of the Rajshahye Division.

WITH reference to your memorandum No. 126 circular of the 22nd May 1874, I have the honor to report that the culture of tobacco is very limited in this district. The cultivation of this crop appears to be carried on to a very small extent indeed. There is no locality in this district which is specially suited for it. Apparently the soil and the nature of the country are not suited to the growth of this vegetable, otherwise there is little doubt but that the enterprising ryots of this district would have engaged in it long ere this.

No. 205, dated Pubna, the 12th June 1874.

From—W. V. G. TAYLOR, Esq., Collector of Pubna,

To—The Commissioner of the Rajshahye Division.

WITH reference to your memorandum No. 126, dated the 22nd ultimo, I have the honor to report that, in my opinion, the measure would be ultimately successful though it would take time to overcome the apathy and prejudices of the people.

---

No. 377, dated Pubna, the 10th August 1874.

Memo. by—W. V. G. TAYLOR, Esq., Collector of Pubna.

COPY to the Assistant Secretary to the Government of Bengal with reference to his letter, No. 14A, Financial Department, dated 30th July 1874.

## COOCH BEHAR DIVISION.

---

No. 7T, dated Camp, Darjeeling, the 17th August 1874.

From—SIR W. J. HERSCHEL, BART., Commissioner of the Cooch Behar Division,

To—The Assistant Secretary to the Government of Bengal.

IN reply to your circular No. 14, of 12th May last, I have the honor to inform you, that I do not think it necessary at present to import a skilled tobacco grower and curer from Manilla, because I hope to see the cultivation and preparation of the leaf carried on in the best possible way by an European planter in the Dooars under one of the late leases. The experiment will be watched with interest, as the plant is largely grown in this part of the country and is particularly fine.

2. In the Cooch Behar state, the Deputy Commissioner is trying the manufacture of cigars under trained supervision; but this experiment is still in its infancy.

---

No. 584, dated Darjeeling, the 8th November 1874.

From—J. WARE EDGAR, ESQ., Deputy Commissioner of Darjeeling,

To—The Assistant Secretary to the Government of Bengal.

WITH reference to your No. 14D, dated 28th October 1874, I have the honor to inform you that a report, of which a copy is annexed, was submitted to the Commissioner of the division on the 11th August last. You will see from this report that little tobacco is grown in this district, and I have no suggestions to make on the subject generally which would be worth offering.

---

No. 126, dated Darjeeling, the 11th August 1874.

From—J. WARE EDGAR, ESQ., Deputy Commissioner of Darjeeling,

To—The Commissioner of the Cooch Behar Division.

WITH reference to your circular No. 39 of the 5th June last, and subsequent reminder, I have the honor to point out that I observe it stated at page 53 of the report on tobacco by Mr. O'Connor, that tobacco is extensively grown in the Terai.

This remark cannot apply to the Darjeeling Terai, for I have been surprised, in going over this part of the district, at the smallness of area under tobacco.

The people seem very unwilling to extend the cultivation, and much prefer tobacco imported from the adjoining districts to that

grown in the Darjeeling Terai. Mr. Paul, late Assistant Commissioner in charge of the Terai sub-division, who went into the subject very carefully, was of opinion that the striking inferiority of Terai tobacco was due to improper cultivation, which again he attributed to the smallness of population and the high rate paid for labor, making it unprofitable to the cultivators to expend the necessary amount of labor upon the patches of tobacco grown by them.

I have had little experience in tobacco growing and do not like to make a positive assertion on the subject, but I am inclined to think that the soil and position of the ground are in fault, and in this opinion I am supported by Mr. Gamble of the Forest Department, who tells me that the soil of the Dooars, where tobacco is grown in great quantities, is light and sandy, thereby differing essentially from the rich heavy clay of the greater part of the Terai.

---

No. 242, dated Julpigoree, the 6th June 1874.

From—CAPTAIN R. C. MONEY, Deputy Commissioner of Julpigoree,

To—The Commissioner of the Cooch Behar Division.

WITH reference to your circular memorandum No. 39, of the 5th instant, and enclosure, I have the honor to report that I believe there is much which may be done by Government for the improvement of tobacco in this district.

In the Dooars and other parts we grow remarkably fine tobacco. I need not allude to this further, as I fully reported on it in my letter No. 301, dated 21st July 1873, and my time is too much taken up with famine work to allow of my now going in to the questions as I would wish.

I would only make the following suggestions. The people of the district are skilled in growth of their own tobacco: what we need is to introduce seed of a better and finer class of tobacco, and if Government will do this, the services of two or three Manilla skilled cultivators and curers would be well repaid. What I should like to try would be an experimental tobacco farm in the Dooars where we should have everything in our favor, if only a cultivator and two or three curers were sent from Manilla.

I think an experiment of this kind would be even better than having one or two men going about teaching the people generally.

---

No. 498, dated Julpigoree, the 10th August 1874.

Memo. by—CAPTAIN R. C. MONEY, Deputy Commissioner of Julpigoree.

FORWARDED to the Secretary to the Government of Bengal, Financial Department, with reference to his letter No. 14A of the 30th ultimo.

No. 696, dated Cooch Behar, the 9th June 1874.

From—T. SMITH, Esq., Deputy Commissioner of Cooch Behar,  
To—The Commissioner of the Cooch Behar Division.

WITH reference to your circular memorandum No. 39, of 5th instant, I have the honor to report as follows :—

2. Mr. O'Connor's remarks (*vide* his report, pages 90 and 91) regarding the backward state of tobacco culture in India, are not applicable to the system of tobacco culture practised in Cooch Behar. I believe that the tobacco growers of Cooch Behar have little to learn in the matter of tobacco culture, and that it would be a mistake to establish a model farm or to import a skilled tobacco grower for the purpose of teaching the ryots an art in which they are already proficient.

3. American, and other kinds of foreign tobacco-seed, have been tried here, but, as elsewhere in India, without very favorable results. I would, therefore, recommend that if any new experiments are undertaken they should be directed to manufacturing the native kinds of tobacco into cheroots.

4. In the matter of curing, the cultivators of Cooch Behar are sufficiently expert so far as the requirements of the native market are concerned; but they have no experience in preparing tobacco for the manufacture of cheroots, although it is said that tobacco is exported from this part of the country to Burmah where it is manufactured into cheroots.

5 Cheroots were successfully manufactured from Cooch Behar tobacco in Calcutta in 1864, for Colonel Haughton, as noticed in Mr. O'Connor's report, page 53. Since that year no further progress has been made in testing the suitability of Cooch Behar tobacco for the manufacture of cheroots. Annual tobacco exhibitions have been held, and a good deal of money has been spent in prizes; but it is believed that the influence of these exhibitions on the culture of tobacco has been nil, and no information has ever reached this office regarding the ultimate disposal of the prize samples forwarded to your office at Julpigoree.

6. I would now recommend a more direct mode of experiment, namely, by manufacturing some cheroots in Cooch Behar. With this view I have already been in correspondence with Messrs. J. H. Fergusson & Company, of Calcutta, who inform me that they can engage, at Rs. 40 per mensem, a practical man acquainted with the art of making cigars who also knows something about the preparation of the leaf. This man wishes to bring with him an assistant on Rs. 20 per mensem, and I think it would be worth while to engage them for six months experimentally, and to attach them to the artizan school. The cost of this experiment would be less than the cost of one tobacco exhibition. If it proved tolerably successful it might be worth while, hereafter, to engage a tobacco curer from Manilla, or if the Government engage a tobacco curer from Manilla for Rungpore his services might be obtained occasionally for Cooch Behar.

7. I shall be obliged by an early reply to my proposal to engage the cigar maker on Rs. 40, with an assistant on Rs. 20 for the artizan school.

---

No. 697, dated Cooch Behar, the 9th June 1874.

Memo. by—T. SMITH, Esq., Deputy Commissioner of Cooch Behar.

COPY forwarded to the Assistant Secretary to the Government of Bengal for information, with reference to his circular No. 14 of 12th ultimo.

## DACCA DIVISION.

---

No. 213, dated Dacca, the 26th June 1874.

From—F. R. COCKERELL, Esq., Commissioner of the Dacca Division,  
To—The Secretary to the Government of Bengal.

WITH reference to Government circular No. 14, dated 12th ultimo, I have the honor to state that it is thought some instruction in the art of curing the tobacco grown in the north-west portion of the Mymensingh district, might probably be attended with encouraging results. The tract of country referred to is contiguous to Rungpore, which is said to be amongst the best tobacco producing districts of Lower Bengal; and if the measure of importing skilled producers from Manilla or elsewhere, for the instruction of the Rungpore cultivators of the plant, is to be carried out, this portion of Mymensingh may fairly be brought within the range of the experiment; but I do not, with such information as I have been able to obtain on the subject, advocate its extension to any other part of this division; as, except in Mymensingh, but little pains is bestowed on the cultivation of the plant, and there is no evidence of any attempt or desire to improve its quality.

---

No. 732, dated Dacca, the 31st August 1874.

From—D. R. LYALL, Esq., Officiating Collector of Dacca,  
To—The Assistant Secretary to the Government of Bengal.

IN reply to your No. 14, dated 12th May, I have the honor to submit the required report.

2. Tobacco is grown in this district almost entirely for home use, and on the small patch of land adjoining the house which serves as a sort of dung-hill, where ashes, cow-dung, and such like are thrown. The grower thus recognizes the necessity for manure which Mr. O'Connor insists on, but the space so manured is small, and I know of no large tract in this district where tobacco would grow and where sufficient manure could be got.

3. Unless it were grown on a large scale I do not think it would pay to import men to teach the art of curing; and as this district is not naturally so suitable for the plant as many others, and has, besides, two large crops which occupy the people, and at the same time are not so troublesome as tobacco—I mean, safflower and jute—I would not recommend the experiment being tried here in the first place.

---

No. 127, dated Fureedpore, the 21st May 1874.

From—W. S. WELLS, Esq., Collector of Fureedpore,  
To—The Assistant Secretary to the Government of Bengal.

I HAVE the honor to acknowledge the receipt of your circular No. 14, dated 12th instant, and in reply to state that the tobacco

grown in this district is of a very inferior description owing to the climate and the moisture in the soil.

2. The time between the country drying up after the annual floods and being inundated afresh is too limited to permit of tobacco arriving at maturity.

3. It is nevertheless grown to a small extent on the higher land round each ryot's house, but the leaf is only used to mix with that imported from Rungpore: it is too poor to smoke alone. As far as this district, therefore, is concerned, there would be no advantage in importing a skilled tobacco grower and curer from Manilla or elsewhere.

---

No. 124, dated Burrisal, the 22nd May 1874.

From—H. BEVERIDGE, Esq., Collector of Backergunge,

To—The Secretary to the Government of Bengal.

IN reply to your circular No. 14, dated 12th instant, I have the honor to state that very little tobacco is grown in this district, and that I have no suggestions to offer on the 3rd paragraph of the Government Resolution.

---

No. 146, dated Mymensingh, the 23rd May 1874.

From—H. J. REYNOLDS, Esq., Collector of Mymensingh,

To—The Assistant Secretary to the Government of Bengal.

IN answer to your circular No. 14, of the 12th instant, I have the honor to state that, in my opinion, the importation of skilled tobacco curers from Manilla to instruct the people, in the art of curing tobacco would be a measure likely to be productive of very great benefit. In this district tobacco is not largely grown, the greater part of the cultivation is in the north-west of the district; but the crop is merely raised for local consumption, and the greater part of the tobacco used is imported from Rungpore. I venture to doubt whether we can greatly improve the existing mode of cultivation, except, perhaps, by the introduction of better seed. In this district the plants are first raised in nurseries, and then carefully planted out, manure being freely applied to the land, and care being taken not to overcrowd the plants. The crop is generally an excellent one, but it is spoilt by bad preparation; and if the art of curing were better understood, I see no reason why Indian-grown tobacco should not command a good price in the market.

## CHITTAGONG DIVISION.

---

No. 198G, dated Chittagong, the 1st August 1874.

From—R. L. MANGLES, Esq., Offg. Commr. of the Chittagong Division,  
To—The Secretary to the Government of Bengal.

I HAVE the honor to acknowledge the receipt of your circular No. 14, dated the 12th May last, on the production of tobacco in India.

2. In reply, I beg to report that the soil generally in the districts of Noakholly and Tipperah is stated to be unsuitable for the cultivation of good tobacco. In these districts, small quantities only are grown of the commonest descriptions for local home consumption. The sites selected for growing the plant are the small patches of artificially raised land round the houses of the villagers.

3. As the area of suitable land is very limited in these districts, no tobacco is grown for exportation, and very little of that locally produced is even offered for sale in the markets.

4. There is no doubt, however, that with proper cultivation and care, very good tobacco can be raised in the Tipperah district. Ten years ago, while Collector of that district, I obtained from the horticultural society some seeds of Virginia and Maryland tobacco. This seed germinated freely, and I planted out about a quarter of an acre of land in my garden, which had been previously highly manured. The plants reached a height of from four to five feet, and bore leaves more than twice the size of those of the indigenous plants. I dried the leaves in the shade in a large room, and afterwards, packing them in heaps, allowed them to heat and ferment for a time. These operations lasted some two or three months. I then applied honey and rum to the leaves and packed them in an iron press. The tobacco I thus obtained was precisely similar to the American cavendish tobacco, and the late General Welchman, to whom I gave some, informed me that he considered it quite as good as the best American tobacco.

5. I gave some of the uncured tobacco, as well as some seeds which I procured from some of the plants raised by me, to several cultivators and others in the Tipperah district. They admired the size of the plants and of the leaves, but after tasting the tobacco declared that it was too strong for them, and that they preferred their indigenous article.

6. The Collector of Chittagong states that the soil in many parts of his district is capable of producing very good raw material. But he is of opinion that unless Government are prepared to give direct encouragement to the cultivation, it would be useless to attempt to introduce a better system of curing than at present prevails.

7. At present, tobacco in the district of Chittagong is grown for home consumption only, and the manufacture is of the most primitive description.

8. Rice being the staple produce of the districts of this division, and affording sure and large profits to the cultivators, I do not think

that they would readily agree, under any circumstances, to extend the cultivation of tobacco. At present there is neither local nor external demand for any increased growth; and as regards that which is at present produced for home consumption, the people having acquired a taste for their indigenous tobacco as grown and cured, would not, I think, appreciate what we would consider a better article.

9. Under these circumstances, I am not prepared to recommend the importation of a skilled grower or curer to introduce and promote the manufacture of tobacco in any of the districts of this division.

10. As regards the culture of tobacco in the Hill Tracts of Chittagong, I beg to refer you to Captain Lewin's letter No. 856, dated the 1st October 1873, a copy of which was forwarded with my predecessor, Mr. Fowle's letter No. 413, dated 10th idem.

No. 583, dated Chittagong, the 25th July 1874.

From—A. L. CLAY, Esq., Officiating Collector of Chittagong,

To—The Commissioner of the Chittagong Division.

WITH reference to your No. 111, dated 27th May last, I have the honor to report that at present tobacco in Chittagong is grown for home consumption only, and the manufacture is of the most primitive description.

2. The soil in many parts of the district seems capable of producing very good raw material; but unless Government are prepared to give direct encouragement to the cultivation, I fear it would be useless attempting to introduce a better system of curing than at present prevails.

No. 754, dated Chittagong, the 7th September 1874.

Memo. by—A. L. CLAY, Esq., Officiating Collector of Chittagong.

COPY forwarded to the Secretary to the Government of Bengal, Financial Department, in compliance with his No. 2497, dated 29th ultimo.

No. 363, dated Noakholly, the 12th August 1874.

From—L. B. B. KING, Esq., Officiating Collector of Noakholly,

To—The Assistant Secretary to the Government of Bengal.

WITH reference to your letter No. 14A, dated 30th July last, I have the honor to inform you that reply to your letter No. 14, dated 12th May 1874, was submitted through the Commissioner of the Chittagong Division on the 4th June last in my letter No. 175, a copy is enclosed.

No. 175, dated Noakholly, the 4th June 1874.

From—L. B. B. KING, Esq., Officiating Collector of Noakholly,

To—The Commissioner of the Chittagong Division.

With reference to your No. 111, dated 27th May 1874, forwarding copy of Bengal Government circular No. 14, dated 12th idem, with enclosures, I have the honor to state that, as already reported in my No. 147, dated 30th ultimo, tobacco cultivation is not carried on in this district. The soil is not, I believe adapted to the cultivation, and I would not therefore recommend the importation of a skilled grower or curer to introduce and promote the manufacture.

---

No. 701, dated Rangamatee, the 11th August 1874.

From—A. W. B. POWER, Esq., Offg. Deputy Commissioner, Chittagong Hill Tracts,

To—The Assistant Secretary to the Government of Bengal.

With reference to your reminder No. 14A, dated 30th ultimo, I have the honor to inform you that the report on tobacco, called for in Government circular No. 14, dated the 14th May 1874, was submitted to the Commissioner of Chittagong on the 30th June last, copy of which is herewith enclosed for your perusal.

---

No. 558, dated Rangamatee, the 30th June 1874.

From—A. W. B. POWER, Esq., Offg. Deputy Commissioner, Chittagong Hill Tracts,

To—The Commissioner of the Chittagong Division.

In reply to your No. 111, dated 27th ultimo, I have the honor to make the following remarks on the subject dealt with in paragraph 3 of circular No. 14, dated 12th ultimo, of the Bengal Government.

2. In this office No. 856, dated 1st October last, Captain Lewin dealt fully with the question, and in paragraph 42 of that report pointed out the difficulty of introducing any changes as to culture of tobacco among hill folk. I need only add that in order to introduce the system of cultivation advocated by Mr. O'Connor in his report on the production of tobacco in India, it would be necessary to induce the hill tribes to give up their present mode of cultivation by jooming and take to the plough. To do this, capital is required, which Government would have to supply, and the strictest supervision would be necessary. At present an experiment of this nature is being tried with reference to food-crops, and the prospect of success is not sufficiently clear to warrant any recommending Government to incur a certain expenditure in the hope of a problematical gain. Further, the spots most favorable for tobacco culture are far from the head-quarters of the district and of the Sungoo and Cox's Bazar sub-divisions, and supervision other than of a slight and casual nature is out of the question.

3. Captain Lewin evinces a great interest in this matter, and has either taken home with him or sent for specimens of the Matamoree tobacco, with a view of ascertaining the possibility of the plant (properly cured) becoming an article of European consumption. At present there are more "irons in the fire" in the hill tracts than the establishment of the district at its present reduced figure can look after effectively. If the services of an experienced curer are obtained for any neighbouring district, I think a few intelligent joomeahs might be sent to learn the process under him. As pointed out by Captain Lewin, the capabilities of the Matamoree valley for tobacco cultivation, if made known, might attract European capital, now that the waste land rules afford the opportunity of securing grants on remunerative terms, and European planters may safely be left to ascertain the most profitable method both of cultivation and of curing.

---

No. 1167, dated Comillah, the 8th August 1874.

From—N. S. ALEXANDER, Esq., Magistrate of Tipperah,

To—The Secretary to the Government of Bengal.

WITH reference to circular No. 14A, dated the 30th ultimo, I have the honor to forward herewith copy of my report to the Commissioner of the division on the subject of cultivation of tobacco in the district.

---

No. 980, dated Comillah, the 5th July 1874.

From—N. S. ALEXANDER, Esq., Magistrate of Tipperah,

To—The Commissioner of the Chittagong Division.

WITH reference to resolution No. 683 of the Government of India, in the Department of Revenue, Agriculture, and Commerce, forwarded with your No. 111, dated the 27th May, 1874, I have the honor to report as follows:—

2. Tobacco is not cultivated in any large quantities by the natives of this district, nor do I think

Note.—It being mostly low land used for the cultivation of rice.

is the soil of the district in general

suitable for such cultivation, only the commonest and coarsest and poorest kind of tobacco is grown in patches about the high lands round village sites by the people for home consumption; none is exported nor generally offered for sale at the markets even; the natives use it in the manufacture of "hookah" tobacco, in the composition of which tobacco *par et sample* only forms a small proportion, the rest of it being composed of molasses, plantain, the patchuli leaf (kuskus), and sandal wood (chundun).

3. One of my correspondents, Mr. J. P. Delanney, mentions that in 1864 you sowed some tobacco in your garden here, which tobacco, he says, turned out exceptionally good. But then this garden is a high spot compared with the surrounding country; it has been artificially raised, and if tobacco were grown in any large quantities, the country would have to be raised for it at a considerable expense. The only good

sites would be round the banks of tanks and such other artificially raised grounds, and the extent of such ground is limited. Mr. Delaney says he doubts if the natives would undertake to grow better tobacco, even if the seeds were supplied to them, as they would be afraid of getting no sale for the tobacco after raising it. At present they do not know what good tobacco is, and unless they change their habits, they are not likely to appreciate it even if they got it.

4. I do not think that there would be much use as far as regards this district in importing a skilled tobacco grower and curer to instruct the native agriculturists. The people are not tobacco growers as they are in Rungpore and Purneah, where they are sufficiently advanced to appreciate any change for the better in the cultivation. Here such a course would be like supplying valuable books to persons who had not quite mastered the alphabets. I think that here if a Government appointed supervisor were to come and visit the villages, the people would be likely to abandon the cultivation altogether under the impression that a tax was going to be levied on the growth, as they did in the case of safflower a year or two ago. (See Mr. Hankey's Annual Administration Report for 1872-73.) The people here are suspicious of the most innocent actions of the Government with reference to them or their ordinary employments. In 1872-73, while in the interior, the Deputy Magistrate of Bramunbariah remarked that there was but little safflower on the ground. In reply to his questions he was told that it was understood that safflower was to be taxed; this resulted from a commission appointed to enquire into the safflower cultivation. The introduction of a new system of cultivation among a people so disposed is, I am afraid, to be despaired of.

---

No. 212, dated Agurtollah, the 15th August 1874.

From—CAPTAIN E. G. LILLINGSTON, Officiating Political Agent, Hill Tipperah,

To—The Secretary to the Government of Bengal.

IN continuation of this office letter No. 207, dated 10th instant, I have the honor to submit the following, as called for in circular No. 14, dated the 12th May 1874.

2. As far as Hill Tipperah is concerned, there is no cultivation of tobacco for exportation or sale. The Munipoorees inhabiting the low lands under the hills, rear a small quantity for their own use.

3. Under these circumstances, I have no recommendations or suggestions to make on the 3rd paragraph of the Resolution referred to in the circular under reference.



## PATNA DIVISION.

---

No. 64R, dated Bankipore, the 15th October 1874.

From—S. C. BAYLEY, Esq., Commissioner of the Patna Division,

To—The Secretary to the Government of Bengal.

I HAVE the honor to acknowledge the receipt of your circular No. 14 of 12th May last, forwarding copy of a resolution from the Government of India, asking for an expression of opinion as to whether, in consideration of the present state of tobacco cultivation and the prospect of its improvement, it would be advisable to import a skilled tobacco grower and curer from Manilla or elsewhere to instruct the native agriculturists in the art of cultivating, and more especially of curing tobacco.

2. In reply, I beg to state that I have proposed separately in my report to the Board that the proposed model farm at Poosa should be devoted in a great measure to tobacco growing, and as Tirhoot is the one tobacco growing district in this division, if a skilled curer could be appointed in common with the model farm at Poosa it would be a good and useful experiment.

3. I beg to forward herewith the Shahabad Collector's report on the subject in original.

---

No. 407, dated Arrah, the 16th June 1874.

From—H. W. ALEXANDER, Esq., Collector of Shahabad,

To—The Commissioner of the Patna Division.

WITH reference to the Government circular No. 14, of the 12th ultimo, forwarded with your circular No. 38R, of the 22nd idem, I have the honor to submit the report therein called for.

2. The Superintendent of the model farm reports, "Tobacco might be tried in the farm, but I cannot recommend its cultivation in the present year, as there is only five acres of manured land available, the greater portion of which is reserved for poppy experiments; the remainder of the farm is more or less sterile, and it would be a certain failure to grow tobacco on such lands. I received last year several kinds of selected tobacco seed from Mr. Levinge, Superintending Engineer, Arrah, but owing to the reasons above stated, I was unable to sow it. Further, the curing, I am afraid, could not be thoroughly carried out here, as there are no sheds or buildings suitable for the purpose."

3. In the sub-division of Sasseram a little tobacco is cultivated, and the Deputy Collector states that "the climate and soil are against any extension of cultivation, and it is only close to villages, where the soil is very rich and well-irrigation constantly available, that the plant can grow. I should say there were not more than 200 beeghas of tobacco in the entire jurisdiction, of which 80 beeghas are near Sasseram city.

Under these circumstances the expense of improving the cultivation cannot be properly undertaken."

4. On the whole I am of opinion that the importation of skilled growers and curers from Manilla or elsewhere would not tend to beneficial results at all commensurate with the expense that would be thereby incurred.

5. I would add that Colonel Parrott, of Kurruntadhee, has for some time past made experiments in tobacco cultivation, and if consulted, he might be able to give some useful and valuable information on this subject.

---

No. A, dated Bankipore, the 7th August 1874.

From—A. C. MANGLES, Esq., Collector of Patna,

To—The Assistant Secretary to the Government of Bengal.

WITH reference to your letter No. 14A, dated the 30th ultimo, I have the honor to inform you that the report on the cultivation of tobacco, called for in your circular No. 14, dated the 12th May last, has been submitted to the Commissioner with this office letter No. 154, dated 23rd July 1874. A copy is annexed.

---

No. 154, dated Bankipore, 23rd July 1874.

From—A. C. MANGLES, Esq., Collector of Patna,

To—The Commissioner of the Patna Division.

I HAVE the honor to acknowledge receipt of your circular memorandum No. 38, dated 22nd May last, forwarding copy of the Government circular No. 14, dated 12th idem, and to reply as follows:—

2. Tobacco is cultivated in this district on a very small scale. It is grown chiefly on the tract lying between the railway and the Ganges, from Futwah to Mokamah, and the area under its cultivation is so insignificant that it would not be worth while to import a skilled grower for the supervision of the cultivation in this district alone.

3. I would at the same time, however, suggest that as tobacco is very extensively grown in some other districts of this division, it might be considered desirable to engage the services of a skilled grower for the division, to have his head-quarters in the district where tobacco is most extensively grown, and visit the other districts occasionally in order to give the benefit of his knowledge and experience to the agriculturists of the whole division.

---

No. 464, dated Gya, the 10th August 1874.

From—A. V. PALMER, Esq., Collector of Gya,

To—The Assistant Secretary to the Government of Bengal.

WITH reference to your circular No. 14A, dated 30th ultimo, I have the honor to inform you that a copy of your circular No. 14, dated 12th May last, was also received in this office through the Commissioner, and I beg to submit a copy of my reply sent to him on the subject.

No. 314, dated Gya, the 30th June 1874.

From—A. V. PALMER, Esq., Collector of Gya,

To—The Commissioner of the Patna Division.

WITH reference to your circular memorandum No. 38R, dated 22nd ultimo, I have the honor to refer you to my letter No. 347, dated 28th May 1873, in which I have reported that tobacco is not produced in this district, but is imported from Tirhoot for consumption.

2. Such being the case, I have no suggestions to make.

---

No. 668, dated Arrah, the 8th August 1874.

From—H. W. ALEXANDER, Esq., Collector of Shahabad,

To—The Secretary to the Government of Bengal.

WITH reference to your letter No. 14A, of the 30th ultimo, I have the honor to inform you that a reply to your circular No. 14, dated 12th May last, was sent to the Commissioner in my letter No. 407 of the 16th June last, a copy of which is herewith submitted.

---

No. 407, dated Arrah, the 16th June 1874.

From—H. W. ALEXANDER, Esq., Collector of Shahabad,

To—The Commissioner of the Patna Division.

WITH reference to the Government circular No. 14, of the 12th ultimo, forwarded with your circular No. 38R of the 22nd idem, I have the honor to submit the report therein called for.

2. The Superintendent of the model farm reports, "That tobacco might be tried on the farm, but I cannot recommend its cultivation in the present year, as there is only five acres of manured land available, the greater portion of which is reserved for poppy experiments; the remainder of the farm is more or less sterile, and it would be a certain failure to grow tobacco on such lands. I received last year several kinds of selected tobacco seed from Mr. Levinge, Superintending Engineer, Arrah, but owing to the reasons above-stated, I was unable to sow it. Further, the curing, I am afraid, could not be thoroughly carried out here, as there are no sheds or buildings suitable for the purpose."

3. In the sub-division of Sasseram a little tobacco is cultivated and the Deputy Collector states that "the climate and soil are against any extension of cultivation, and it is only close to villages where the soil is very rich and well-irrigation constantly available, that the plant can grow. I should say there were not more than 200 beeghas of tobacco in the entire jurisdiction, of which 80 beeghas are near Sasseram city. Under these circumstances, the expense of improving the cultivation cannot be properly undertaken."

4. On the whole, I am of opinion that the importation of skilled growers and curers from Manilla or elsewhere would not lead to beneficial results at all commensurate with the expense that would be thereby incurred.

5. I would add that Colonel Parrott, of Kurruntadhee, has for some time past made experiments in tobacco cultivation, and if consulted, he might be able to give some useful and valuable information on this subject.

---

No. 101, dated Mozufferpore, the 17th August 1874.

From—C. F. WORSLEY, Esq., Officiating Collector of Tirhoot,

To—The Assistant Secretary to the Government of Bengal.

WITH reference to your circular No. 14, dated 12th May 1874, I have the honor to report that, in my opinion, it would be advisable to import a skilled tobacco grower and curer from Manilla, with a view to improve the present system of cultivating tobacco. The instructor so imported might be attached to the establishments of the model farm about to be organized at Poosah.

---

No. 141, dated Chupra, the 8th August 1874.

From—J. S. DRUMMOND, Esq., Officiating Collector of Sarun,

To—The Secretary to the Government of Bengal.

WITH reference to his No. 14A, dated the 30th ultimo, has the honor to inform that the report called for in Government circular No. 14, of the 12th May, was submitted to the Commissioner on the 25th of June 1874. A copy of the same is herewith enclosed.

---

No. 87, dated Chupra, the 25th June 1874.

From—J. S. DRUMMOND, Esq., Officiating Collector of Sarun,

To—The Commissioner of the Patna Division.

WITH reference to your circular memorandum No. 38R, dated the 22nd ultimo, forwarding copy of Government circular, No. 14 of the 12th idem, I have the honor to state that tobacco is cultivated in Sarun to a very limited extent, and what is grown is of an inferior description and used entirely for home consumption (*vide* this office letter No. 147, dated the 18th of August 1873).

2. Regarding paragraph 3, of the Resolution of the Government of India, I beg to state that the introduction of a better system of cultivating, and more especially of curing, tobacco than at present obtains, should be tried first in districts or divisions where tobacco is more extensively grown.

---

No. 192, dated Motiharee, the 11th August 1874.

From—W. B. OLDHAM, Esq., Officiating Collector of Chumparun,

To—The Secretary to the Government of Bengal.

WITH reference to your letter No. 14A, dated the 30th ultimo, I have the honor to state that no report accompanied your No. 14

circular of the 12th May last, and that the Commissioner, by whom I was also called on to report on the subject, was unable to supply me with a copy.

I beg to forward a copy of the report on the subject which has been already submitted to the Commissioner.

No. 190, dated Motiharee, the 8th August 1874.

From—W. B. OLDHAM, ESQ., Officiating Collector of Chumparun,  
To—The Commissioner of the Patna Division.

WITH reference to your letter No. 55R, dated the 5th instant, I have the honor to state that as I have been unable to get a copy of the report, I can give no opinion on the questions discussed therein regarding the questions put by His Excellency the Governor-General. Tobacco cultivation in this district is so very limited that I can only give an opinion based on general ground. I should not suppose that the system of cultivating was in fault, as the tobacco plant can be and is brought in India to almost any degree of luxuriance. But in Bengal there is no knowledge of the art of curing tobacco in such a fashion as to make it acceptable to any but the natives of the province themselves, and the tobacco of Rungpore is said to be conveyed in large quantities to Burmah and brought back thence in the form of cheroots.

Experiments have, I believe, been made from time to time, and are being still made, in Madras by private persons to introduce a better system of curing, and one which would bring Indian tobacco into demand as an article of exportation. If the Government is about to stimulate such efforts, it would apparently be the best course to do so in conjunction with the private persons who are trying to attain the same object.

Speaking for this district only, I certainly would not advise recourse being had to improve tobacco cultivation or curing as long as no more certain results have been attained than those which I have so far heard of. It would not be a good site for such experiments.

---

No. 276, dated Motiharee, the 23rd September 1874.

From—W. B. OLDHAM, ESQ., Offg. Collector of Chumparun,  
To—The Assistant Secretary to the Government of Bengal.

REFERRING to your No. 2498 of the 29th ultimo, I have the honor to state that since the receipt of your letter under reply I have made enquiries in all parts of the district, and from many of the residents, and, as the result, find that it would be a very unfavorable site in which to introduce any of the experiments which the Government of India wishes to try. The quantity of land grown with tobacco is very insignificant indeed, and must remain so as long as opium is cultivated to its present extent. As a general rule, all its land which would grow tobacco is taken up with opium, a fact which I believe obtains in all the districts where opium cultivation is allowed on so large a scale as in this. I can therefore only advocate the trial of the experiments referred to in Bengal on general grounds.



## BHAGULPORE DIVISION.

---

No. 164GR, dated Bhagulpore, the 19th August 1874.

From—G. N. BARLOW, ESQ., C.S.I., Offg. Commissioner of the Bhagulpore Division,

To—The Secretary to the Government of Bengal.

WITH reference to Government circular No. 14 of the 12th May last, I have the honor to state that as far as the districts of this division are concerned, I do not see the advisability of commencing any special measures having for their object the improvement of Indian tobacco, and especially I would not at present adopt the proposal of getting a skilled tobacco grower and curer from Manilla or elsewhere. Tobacco is grown only in patches in the alluvial soil on the north of the Ganges, and the cultivation is not extensive enough to necessitate the adoption of special measures for regulating it. Mr. Gouldhauke, the gentleman whose report on the cultivation of tobacco in Rungpore has been quoted at page 50 of Mr. O'Connor's printed report, says, indeed, that a good deal of tobacco is grown about Lallpore in Purneah, and that, in his opinion, as good tobacco can be grown there as in Rungpore. But considering the difficulties which are calculated to beset an endeavour to improve the cultivation, I would not hazard an experiment there. Mr. Gouldhauke adds that his efforts to improve the tobacco cultivation about Lallpore met with the greatest passive resistance even by the people who cultivate his own fields.

2. While reporting thus, regarding the conditions of tobacco cultivation in this division, it is furthest from my intention to offer any discouragement in respect of the proposals to try and effect improvement in the quality of the plant grown in this country. I consider that they are worthy of all support, but I think the experiment had better be tried in districts where the soil is specially adapted to tobacco cultivation like that of Rungpore, and then extended by degrees to other districts as it is found successful.

3. The Magistrate of Monghyr reports that Colonel Murray, the Secretary to the Government gardens there, has raised a nice crop of tobacco, and endeavoured to carry out the directions contained in the circulars of Government about the preparation of the plant; but as he feels that no printed instructions can in any way come up to practical knowledge, he suggests the importation of a curer; but I think the small cultivation in the Government gardens is not worth the services of a foreign curer.

4. I extract, in conclusion, what appears to be an important observation contained in a letter from Mr. Gouldhauke to the Collector of Purneah:—"The present cultivation of tobacco is regulated by the taste of Indian purchasers. The latter prefer coarse and strong kinds, the growers consequently produce such tobacco. The effect of improving the flavour of tobacco as we would consider it, would be a

fault in the estimation of the native consumer. While this improved on Manilla tobacco would be unsaleable here, would it suit the European markets? I fear not. The conclusion I arrived at is, that we should either stimulate the present cultivation so as to produce the best and largest crop for an Indian market, or induce a separate cultivation for European consumption by offering prices and buying up the improved kinds that would otherwise be unsaleable."

---

No. 417, dated Monghyr, the 16th June 1874.

From—H. J. NEWBERY, Esq., Officiating Collector of Monghyr,  
To—The Commissioner of the Bhagulpore Division.

WITH reference to your memorandum No. 86GR, of the 30th ultimo, I have the honor to inform you that Colonel Murray, the Secretary to the Government garden at Monghyr, has actually raised a very fine crop of tobacco, and endeavoured to carry out the directions of the Government circulars about the preparation of the plant.

But he feels, and I quite endorse his opinion, that no printed directions can in any way come up to practical knowledge, and would advise the importation of a skilled tobacco curer.

I propose to send a sample of the tobacco raised here to the largest tobacco manufacturing firm in London, and get from them a full account of what it is worth; what is wrong about it; how to remedy it; how it should be packed; and, in fact, all the details showing us our deficiencies in a European market.

---

No. 749, dated Monghyr, the 14th August 1874.

From—E. D. LOCKWOOD, Esq., Officiating Collector of Monghyr,  
To—The Assistant Secretary to the Government of Bengal.

REFERRING to your No. 14A, of the 30th July 1874, I have the honor to submit herewith a copy of Mr. Newbery's reply to circular No. 14, of the 12th May last, furnished to the Commissioner of the division, with reference to his No. 86GR, of the 30th idem.

---

No. 488G, dated Bhagulpore, the 5th August 1874.

From—V. T. TAYLOR, Esq., Collector of Bhagulpore,  
To—The Commissioner of the Bhagulpore Division.

WITH reference to your memorandum No. 86GR, dated 30th May last, forwarding a correspondence calling for a report regarding the production of tobacco, I have the honor to state that, as far as the district of Bhagulpore is concerned, it would be useless to import skilled tobacco growers, or curers, &c., though beyond all doubt the result of importing such for certain districts, especially Rungpore, might prove a most useful measure, and tend to the great improvement in the tobacco now grown there.

As regards the tobacco grown in this district, I need do no more than draw your attention to my letter on the subject, No. 761, of the 28th July 1873, from which you will note how very small the cultivation of tobacco really is.

The experiment suggested, if attempted, should be introduced by degrees, commencing with some of the large tobacco producing districts; and, if successful in them, it could be gradually extended.

No. 500G, dated Bhagulpore, the 7th August 1874.

Memo. by—V. T. TAYLOR, Esq., Collector of Bhagulpore.

COPY forwarded to the Assistant Secretary to the Government of Bengal with reference to letter No. 14A, dated 30th ultimo.

No. 715, dated Purneah, the 31st August 1874.

From—W. KEMBLE, Esq., Collector of Purneah,

To—The Assistant Secretary to the Government of Bengal.

REFERRING to your circular No. 14B, of the 26th instant, I have the honor to submit herewith a copy of my report on tobacco cultivation forwarded to the Commissioner on the 11th idem.

No. 637, dated Purneah, the 11th August 1874.

From—W. KEMBLE, Esq., Collector of Purneah,

To—The Commissioner of the Bhagulpore Division.

WITH reference to your No. 86GR, dated 30th May 1874, I have the honor to state that on receipt of the Government resolution I sent a copy of Mr. O'Connor's report to Mr. Gouldhauke, a planter of this district, whose experience in the cultivation of tobacco in the district of Rungpore is noticed at page 50. I particularly asked Mr. Gouldhauke's opinion on the practicability of introducing a trained manufacturer of cigars from Manilla. I annex in full a copy of the reply which I received.

“*Lallpore, 14th June 1874.*—Many thanks for sending me the Government work on tobacco cultivation. It is pleasant to see one's effort at doing good meet with some notice. I took so much trouble to describe the Rungpore mode of cultivating and preparing tobacco because it seems to me far better than what is seen in other districts. I am convinced that improvements can be brought about only by small and imperceptible degrees, and any attempt at a radical change (like a leap from savage to civilized existence) is an impossibility.

“I think if a man were brought from Manilla to teach the natives there would be two difficulties to contend with: one in the teacher, the other in the people to be taught. The Manilla man would stick to the details (even where of no importance) he had been accustomed to, with as much pertinacity as the natives do to their own model.

"I would recommend that an able Englishman be sent to Manilla to learn and study the whole subject. He should be a man that has already had some Indian experience. Such a man would be able to decide how much of the Manilla system was suited to Bengal, and what adaptations and modifications to altered conditions were necessary or possible.

"I have kept the report to read and will return it in a few days. Is it possible for me to get a copy of it? I return two printed papers that were in the book.

"I may mention that there is a good deal of tobacco cultivation about Lallpore. It is in much the same latitude as Borabary in Rungpore, where I was: and other things common to north Rungpore are seen here. I am convinced that as good tobacco could be grown here as there. My endeavours to improve the tobacco cultivation here met with the greatest passive resistance, even by the people who cultivate my own fields. My attempts last year to introduce Indian-corn failed entirely. The famine has compelled them to take to it this year on rather a large scale.

"I may mention another point of view, and a most important one.

"The present cultivation of tobacco is regulated by the taste of Indian purchasers. The latter prefer coarse and strong kinds: the growers consequently produce such tobacco. The effect of improving the flavor of tobacco, as we would consider it, would be a fault in the estimation of the native consumer. While this improved, our Manilla tobacco would be unsaleable here, would it suit the European markets? I fear not. The conclusion I arrive at is that we should either stimulate the present cultivation so as to produce the best and largest crops for an Indian market, or induce a separate cultivation for European consumption by offering prices and buying up the improved kinds that would otherwise be unsaleable."

---

No. 3304G, dated Doomka, the 31st October 1874.

From—J. BOXWELL, Esq., Offg. Deputy Commissioner, Sonthal Pergunnahs,  
To—The Assistant Secretary to the Government of Bengal.

I HAVE the honor to submit the report called for in your No. 2499A of the 1st instant, and at the same time to apologise for both the delay in submitting it and the meagreness of it.

2. I can really give no information that would be of any value. This district is backward in agriculture, even in the matter of rice. Many villages have never seen water raised a foot irrigate. The utmost they can do is dam up water on high ground to irrigate below.

3. But with our very great variety of soil it is most notable that experiments would lead to some result. Tobacco is very rarely seen.

4. However, if I am to give an opinion on the advisability of importing a skilled tobacco manufacturer, I must say that I think not to do so is to throw away a great chance.

5. I mean to grow some tobacco in the most suitable soil that I can find, and shall have the honor of reporting the result.

## ORISSA DIVISION.

No. 215, dated Cuttack, the 24th June 1874.

From—T. E. RAVENSHAW, Esq., Commissioner of the Orissa Division,

To—The Assistant Secretary to the Government of Bengal.

IN reply to your No. 14, of 12th May, I have the honor to state that the state of tobacco culture and trade, as reported in my No. 403, of 20th September 1873, is not so advanced in Orissa as to warrant the importation of a skilled tobacco grower and curer from Manilla.

2. I would suggest that a very simple, plain, concise, and practical paper containing hints on improvement of tobacco culture and the probable profits derivable from its cultivation, may be prepared and sent to me in English. I will, if permitted, have 50,000 copies printed in the vernacular and distributed to the people; and some years hence, when these hints have had time to sink into the cultivator's mind, which is conservative and obtuse, we may then raise the question of importing skilled growers and curers of the leaf.

3. I think we fail generally in the dissemination of practical and plain information among the people. Elaborate reports and monographs are drawn up, which float on the upper surface of official observation, while the people remain in ignorance. I think the Revenue and Agricultural Department would do well to employ a practical man, who, in communication with an intelligent and well-informed native, might draft a series of practical hints on the cultivation of different crops, put in simple language suited to the people that would sink into their minds. Neither of the officers so employed should be either classical scholars or botanists, and should be prohibited from using hard words. Monographs thus digested and reduced to the popular level might then become of real practical benefit to the country.

No. 981, dated Cuttack, the 10th August 1874.

From—JOHN BEAMES, Esq., Collector of Cuttack,

To—The Assistant Secretary to the Government of Bengal.

IN reply to your Nos. 14 and 14A., dated 12th May and 30th ultimo, respectively, I have the honor to state that I have no suggestions to offer about tobacco. The indigenous tobacco is very fair, and I do not think that any improvements suggested by foreigners are likely to be adopted by the Ooriyas, who understand their own climate and soils better than we do.

No. 444, dated Pooree, the 10th August 1874.

From—J. S. ARMSTRONG, Esq., C.S., Collector of Pooree,

To—The Assistant Secretary to the Government of Bengal.

I HAVE the honor to acknowledge the receipt of your letter No. 14A, dated 30th ultimo, received yesterday.

2. I regret that there has been delay in replying to your circular No. 14, dated 12th May last. I have been awaiting a report from the sub-divisional officer. It has not yet been received; but if it arrives in reasonable time I will send it in full, together with my own remarks.

3. The question regarding the curing of tobacco is one about which I have often thought, and I am decidedly of opinion that slovenliness in this process is a main cause of the badness of Indian tobacco. Regarding tobacco used for the hookah or water pipe of the East I am not confident in my judgment, because tobacco for that purpose will never be exported for home use. We are aware that it suits the taste of the natives of this country, and that is sufficient. But I presume your question has reference to the production of a sort of tobacco which would be valued in the foreign market.

4. In Orissa tobacco is smoked in the form of cigars or *pinkas*, and every one who has tried these cigars knows that they are both bitter and bad. There is a sourness in the flavour that distinctly indicates bad curing in the leaf. Nevertheless I have heard of very good cigars being manufactured for a person of rank, a raja in the Tributary Mehals. They were made of native tobacco. Mr. Ravenshaw, the Commissioner of Orissa, showed me some, but I did not try them myself. Again, very fair cigars are made in the Madras presidency, though they are badly rolled.

5. These remarks seem to point to the conclusion that the treatment of the leaf has a share in spoiling cigars; and if any one should argue that bad rolling was the cause, I should simply ask how it is that no one has ever heard of any tobacco grown and cured by the natives of India fit to be smoked in a meerschaum.

6. I am certainly of opinion that if it is desired to raise the quality of manufactured Indian tobacco a person of skill should be employed.

7. But is it worth while to make the attempt? There are two objections to this course. The first arises from the heavy duty levied on tobacco by foreign custom houses. Only a very superior article could bear this. The next is the great slowness with which our tobacco would find its way into general acceptance. Smoking is so very much a matter of habit that a strong preference is felt for the sorts of tobacco to which the smoker is accustomed. For instance, I have observed in France that persons in the habit of using the dry and poor caporal tobacco prefer it to the best American sorts.

8. Now our tobacco, however made up, would be sure to have a very peculiar flavour, and therefore it would be a long time working its way into general use abroad.

9. On the whole I am decided on the advisability of trying the experiment. The risk and trouble would be very small, and benefit might result.

No. 498, dated Pooree, the 26th August 1874.

From—J. S. ARMSTRONG, Esq., C.S., Collector of Pooree,

To—The Assistant Secretary to the Government of Bengal.

IN continuation of my letter No. 444, dated 10th instant, I have the honor to forward a copy of a report, No. 178, dated 24th instant, from the Deputy Collector of Khoordah, regarding the cultivation of tobacco in that part of the district of Khoordah.

2. The Deputy Collector does not touch on the question which was to be answered, but I have expressed my own opinion on the subject.

3. His report, however, is interesting in other respects, and I would draw attention to his request for more Virginia seed, his own plants having become largely hybridized.

4. I beg to draw your attention to the incidental mention of the Khoordah forest tracts—which are a blessing to the people, by supplying firewood, and preventing waste of manure. We endeavour to preserve the wood as much as possible, though we have no officer employed as forest ranger. Such an officer should, I think, be appointed.

5. For the cultivation of superior tobacco, manure is admitted to be indispensable, and, no doubt, both tobacco and many other staples have deteriorated for want of manure. On the other hand, manure cannot be had if the peasantry are obliged to employ *bois de vache*.

---

No. 178, dated the 24th August 1874.

From—W. C. TAYLOR, Esq., Deputy Collector of Khoordah,

To—The Collector of Pooree.

WITH reference to your No. 202, of the 25th May, forwarding for report an extract from the proceedings of the Government of India, in the Department of Revenue, Agriculture, and Commerce, No. 683, of the 26th December 1873, and a copy of circular No. 14, of the 12th May 1874, relating to the cultivation of tobacco, I have the honor to state that, owing to the non-receipt, until the 15th instant, of Mr. O'Connor's pamphlet, I have not been able until now to submit the report called for.

2. I have not had much experience in sowing or curing tobacco, but I have grown some on a small scale from Virginia seed for the last two years, and have succeeded in obtaining leaf of better size and flavour than is usually yielded by the local variety of the plant.

3. In Khoordah the natives have hitherto cultivated tobacco only to a small extent on the alluvial deposits left on the banks of rivers by floods commonly called "pattoo." The tobacco so grown is rank and strong, and yields, when burnt, a dark brown or grey incoherent ash. No manure is used or required on "pattoo" soil. The native cultivation is fair. The soil is deeply hoed or ploughed, and the plants raised after the end of the rainy season in seed beds. They are then planted out at distances of two or three feet apart, and topped when seven or eight

leaves are formed. The crop is irrigated and weeded and hoed at intervals, and all lateral shoots or suckers carefully picked off. The lower leaves are plucked as soon as they begin to get a mottled yellowish appearance; but the bulk of the crop is gathered at the same time when the plants are all cut down. If the season is an early one, a second but smaller and inferior crop is obtained from the suckers, which sprout from the stumps. Irrigation by bailing, or flow (where practicable), is nearly always required.

4. Tobacco of a good quality, even for the European markets, could, I am sure, be grown in many places on the Khoordah estate, where the soils have not been so far exhausted as in the delta. There are many soils derived from the decomposition of gneiss and other rocks containing feldspar, and which are rich in both organic and inorganic salts of potassium having at the same time sufficient lime and silica. Many tracts of such soil are still covered with thick jungle; in other places the land has only recently been brought under cultivation. Even in these tracts which have been for many generations cultivated with rice, manure is annually applied to the soil. Owing to the abundance of firewood, the Khoordah ryots have not yet been reduced to the necessity of using their cow-dung for fuel, and they carefully collect all cow-dung and other refuse for manure, so that the Khoordah soils have not yet been exhausted of plant food.

Natives of Orissa do not appreciate flavour in their smoking. As a rule strength in nicotin is what they require. Ooriyas are all great smokers, especially of cheroots; even the women smoke, and I have frequently seen children of six or seven years of age with cheroots in their mouths. Flavour combined with strength would not be objected to, for I have found that the Ooriyas have a great fancy for my cheroots, which are made by Mr. Roberts, of Coconada; but flavour without strength, such as in the Manilla or Havana cigars, would not be cared for.

6. It would, I think, be very difficult to induce the Khoordah people to try experiments with a view to growing tobacco for European markets.

Tobacco is an expensive and troublesome crop to raise and cure, and the returns slow; very few men in Khoordah could afford to cultivate the plant as their chief crop. The local system of curing also is very rough and defective, and it would be long before the ryots could be trained to cure their tobacco on a better system. There is no doubt that the strength and flavour both depend, in a great measure, on the curing as well as on the weather and state of maturity in which the crop is gathered. The local system is directed entirely with a view to increase the strength and pungency of the tobacco and without reference to the aroma, or to the preservation of the leaf from injury.

7. I am inclined to think that the seedlings should be raised earlier than is the custom, for I have found that by sowing the seed after the close of the rainy season, the crop does not come to maturity till the very strong southerly winds and extremely hot weather set in.

In Khoordah, the southerly winds are so strong that the larger leaves are torn, sometimes to shreds; and in March and April the heat

is so great that even with irrigation the points and edges of the leaves are scorched and shrivelled up, and I am now sowing seed under shelter so as to have young plants ready to plant out in October, in the hope that I may be able to gather the crop before the strong winds and hot weather set in.

8. I should like to have a small packet of good fresh seed, as what I have has become hybridized and deteriorated.

9. I regret that I have not been able to give you more information on the subject of tobacco, but I know so little of the cultivation myself, and so small an extent is cultivated in Khoordah that I hope to be excused for the meagreness of this report.

---

No. 474, dated Balasore, the 8th August 1874.

From—T. NORMAN, Esq., Acting Collector of Balasore,

To—The Assistant Secretary to the Government of Bengal.

REFERRING to your letter No. 14A, of the 30th ultimo, I have the honor to state that the amount of tobacco grown, or capable of being grown in this district, is too small to warrant the employment here of a skilled tobacco curer, particularly as the experiment is a new one, capable of being tried to much greater advantage in districts which yield a much larger crop.



## CHOTA NAGPORE DIVISION.

No. 3182, dated Chota Nagpore, the 30th September 1874.

From—COLONEL E. T. DALTON, C.S.I., Commissioner of Chota Nagpore,

To—The Assistant Secretary to the Government of Bengal.

WITH reference to your circular No. 14, of the 12th May last, I have the honor to state that all gentlemen consulted on the subject are of opinion that it would answer no good purpose to incur expense in encouraging the cultivation and preparation of tobacco in Chota Nagpore.

2. I beg permission to refer you to my letter No. 202T, of the 10th September 1873, and its accompaniments. From these it will be seen that the soil and climate of the districts of Chota Nagpore are not suited, it is supposed, for the production of good tobacco; the quantity raised is insignificant, and there is no exportation. The consumers, as a rule, prefer Behar tobacco, which is largely imported. If, then, costly experiments are to be made to encourage production, it should be in the exporting rather than in the importing districts, and therefore *this* is not a situation for a commencement of such experiments.

3. It is nevertheless extremely probable that the cultivation of tobacco on virgin soil—the timber on which has been felled, allowed to dry, and then burned, the jum or dahiya system of cultivation, which gives such certain and luxuriant crops of cereals and of almost every thing that is grown on it—would be successful; but hitherto it has been grown chiefly on homesteads.

4. I have reported before that I have seen fine crops of tobacco in the southern tributary estates. It is grown on homesteads, but the people who cultivate it use wood ashes very extensively in their gardening.

No. 943, dated Hazareebagh, the 17th August 1874.

From—H. S. BEADON, Esq., Offg. Deputy Commissioner of Hazareebagh,

To—The Assistant Secretary to the Government of Bengal.

I HAVE the honor to acknowledge the receipt of your letter, No. 14A, dated the 30th ultimo, and to state that my reply to your circular No. 14, of the 12th May last, was submitted through the Commissioner of the division on the 4th July 1874, an extract from which is hereto annexed.

No. 793, dated Hazareebagh, the 4th July 1874.

From—H. S. BEADON, Esq., Offg. Deputy Commissioner of Hazareebagh,

To—The Commissioner of Chota Nagpore.

I HAVE the honor to reply to your second reminder on the subject of tobacco cultivation. I have not replied before, because I, last year, in my letter No. 740, dated 28th July, gave you all the information I

have regarding tobacco. I see that Hazareebagh is not one of the suitable regions for the growth of tobacco mentioned by Mr. O'Connor, and I do not think that it would in the least degree repay Government to import a skilled tobacco grower and curer from Manilla or elsewhere into this district. The state of tobacco culture and the prospects of its improvement are not sufficient to render it probable that the ryots would derive any benefit from such instruction. \* \*

---

No. 152, dated Chota Nagpore, 9th September 1874.

From—T. F. PEPPE, Esq., Sub-Deputy Opium Agent, Chota Nagpore,  
To—The Deputy Commissioner of Lohardugga.

IN reply to your Nos. 2234 and 2400, dated 13th and 31st August last, I have the honor to state that at present I do not think it would be advisable to incur any expense in developing the tobacco cultivation in this district until something definite has been arrived at as to the possibility of producing really good tobacco. This having been settled, it will then be time to make some arrangement to develop the tobacco producing capacities of this district.

2. In the first place it will be necessary to get an opinion as to the quality of the native grown tobacco, and for this purpose I forward herewith five seers of the common tobacco grown in the district and prepared in the native manner.

3. Doctor Broughton is strongly of opinion that unless tobacco is found to contain a certain amount of mineral constituents it cannot be good, nor the soil it was grown in capable of yielding a first class tobacco. It would therefore be as well to have this point settled for this district, and with this view I forward a sample (A) of the tobacco grown here.

4. Mr. Grose has also kindly favored me with a sample of Manilla tobacco grown by him in this district, containing 20 seers, which would be quite large enough to obtain a reliable opinion on as a commercial sample; this might also be analysed.

5. Further, a sample of cheroots made from the Manilla leaf grown here last year has also been placed at my disposal by Mr. Grose, and I think they will be sufficient to show that with care and experience there is nothing to prevent a first class tobacco being produced in this district. Mr. Grose states that the state of his health will prevent him going on with his experiments, which is much to be regretted, seeing that he has now had a certain amount of experience.

6. I forward another sample (B) which is the common Tirhoot tobacco sold in the bazars; and would direct your attention to the fact that, while tobacco grown in this district sells at Rs. 8 per maund, this Tirhoot tobacco sells for Rs. 13 per maund, and that it would be desirable before attempting to produce an article for European use to supply our own district with tobacco.

7. The tobacco consumed in this district alone is very considerable. Nearly all the Moondas and Oorans chew it, and the annual

consumption must be considerable, the greater portion of which is imported from Tirhoot; and there would seem to be no great difficulty in bringing our native grown tobacco up to the standard of the Tirhoot tobacco.

8. To all experience it is a matter of curing. While the native grown tobacco is of a light yellow colour, the Tirhoot tobacco is of a dark chestnut, showing superior curing.

9. In the Tobacco Manual I do not find any mention of the manner of curing adopted in Tirhoot. I know of one experiment in this way by a native of Tirhoot, to grow and cure his own tobacco in the manner customary in Tirhoot, and by a Kuiree, a native of Mozufferpore. Still I was informed that, although very much improved, the tobacco so grown and cured was not equal to the Tirhoot. This has suggested to my mind doubts as to the soil being capable of producing the same quality of tobacco. Possibly the native idea might be found to be antagonistic to European ideas; and the tobacco, liked by natives would not be relished by Europeans. At all events the first step is clearly to obtain an authentic opinion—

1st—On the native grown tobacco.

2nd—On the Manilla tobacco grown and cured by a European.

3rd—In what points the native tobacco differs from the Tirhoot.

10. I had hoped to be able to submit some samples of Manilla and American tobaccos grown by the natives, but the terribly destructive hail and rain of last December quite destroyed the tobacco, which had been reared from foreign seed distributed by me last year. I have again distributed some acclimatized foreign seed; and if more successful this year, I will be able to send samples for analysis, &c., and I will try, if possible, to get a Tirhoot man accustomed to tobacco curing, to cure some of the native tobacco in the Tirhoot manner, to compare with the ordinary tobacco cured in the way customary in this district.

11. I forward another sample of native grown tobacco, the produce of *N. Rustica*, called Hingli by the natives.

No. 2522, dated Lohurdugga, the 14th September 1874.

Memo. by—H. L. OLIPHANT, Esq., Deputy Commissioner of Lohardugga.

COPY of the foregoing forwarded to the Assistant Secretary to the Government of Bengal, with reference to Government circulars Nos. 14, of 12th May, and 14B, of 26th ultimo, with an intimation that the sample of cheroots referred to in paragraph 5 of Mr. Peppe's letter has been forwarded to Calcutta to his address by dâk banghy. The undersigned has not yet received the samples of tobacco alluded, to in the 2nd, 4th, 6th, and 11th paragraphs of Mr. Peppe's communication. The packages are, it is believed, too heavy to be forwarded by dâk, and the undersigned would accordingly solicit instructions as to whether their submission is desired by road or rail.

No. 552, dated Chybassa, the 11th August 1874.

From—CAPTAIN C. GARBETT, Offg. Deputy Commissioner of Singbhoom,  
To—The Assistant Secretary to the Government of Bengal.

IN reply to your circular No. 14A, dated 30th July 1874, I have the honor to inform you that a report  
\* No. 14, dated 12th May 1874. to the circular\* referred to was sent to  
the Commissioner on 13th June last. A copy of the letter is herewith enclosed.

No. 316, dated Chybassa, the 13th June 1874.

From—CAPTAIN C. GARBETT, Offg. Deputy Commissioner of Singhboom,  
To—The Commissioner of Chota Nagpore.

IN reply to your letter No. 1602, dated 30th May, received on 5th instant, I have the honor to inform you that a report on the production of tobacco in this district was forwarded to you from this office on the 20th August 1873.

2. With reference to paragraph 3 of Government resolution 683, dated 26th December last, forwarded with circular No. 14, dated 12th May 1874, I do not consider, so far as this district is concerned, that it would be of the slightest use to resort to any of the measures proposed for improving the cultivation of tobacco. The amount of such cultivation in this district is so utterly insignificant, and there is nothing either in the soil or climate peculiarly favorable for its production. For the present, I think, the attempts to improve tobacco cultivation in this district should be confined to trying what can be done in model farms.

No. 1813, dated Purulia, the 8th August 1874.

From—COLONEL E. A. ROWLATT, Deputy Commissioner of Manbhoom,  
To—The Assistant Secretary to the Government of Bengal.

IN reply to your circular letter No. 14A, dated the 30th ultimo, I have the honor to inform you that a report on tobacco cultivation was submitted by me to the Commissioner of this division on the 20th August 1873, and a further one on the 22nd May and 24th June last, copies of which I beg to annex.

No. 1773, dated Purulia, the 20th August 1873.

From—COLONEL E. A. ROWLATT, Deputy Commissioner of Manbhoom,  
To—The Commissioner of Chota Nagpore.

WITH reference to your office memorandum No. 1233, of the 19th May last, I have now the honor to submit what information I have been able to procure regarding the points connected with the cultivation of tobacco in this district, referred to in the Government circular (Agricultural Department) No. 11, dated the 3rd April 1873.

1. *Chief localities of cultivation with particulars of climate.*—Tobacco is cultivated generally over the whole area of this district, but to a greater extent in the southern pergunnaahs of Raipore, Simlapal, Shamsunderpore, and Phulkusma, than elsewhere. The climate compared to that of lower Bengal is drier, and the rainfall less, not being more on an average than 54 inches per annum. During the months of April, May, and June the heat is occasionally excessive in consequence of the prevalence of the strong westerly hot winds; and during this period the air is extremely dry, so much so that all vegetation is burnt up and nothing scarcely is visible but the dried up bare ground. During the rains and cold weather the temperature is moderate, but the thermometer does not generally ever range below 58°.

2. *Approximate number of acres under cultivation during each of the last five years.*—The approximate number of acres under tobacco cultivation may, on a rough cultivation, be put down at 800; but as there are no records in the office or any obtainable from the zemindars which contain the ascertained area of tobacco cultivation, this estimate must be received with caution.

3. *Average quantity produced per acre.*—The quantity of tobacco produced on an acre of land appears to vary from about two to five maunds, according to the nature and fertility of the soil, and the quantity of manure and care given to the cultivation.

4. *Cost of cultivation per acre.*—The cost of cultivating an acre of land with tobacco may be estimated at about Rs. 1-12.

5. *Quality and price of crop in different localities.*—The best tobacco grown in this district is produced in the pergunnaahs of Raipore, Simlapal, Bhelliediha, Shamsunderpore, and Phulkusma, in the south-east part of the district and on the borders of the Damudur river. That grown on the lands bordering rivers and streams is considered of superior quality to that cultivated elsewhere; and the leaves which are gathered after the first cutting make the best tobacco. The quality is also a good deal affected by the nature of the soil, which in some places is better adapted to its growth than others. The quantity produced per acre appears to vary from two to five maunds; and as the price ranges between Rs. 4 and Rs. 8 a maund, it follows that the value of the crop per acre varies between Rs. 8 to Rs. 40, according to the yield and quality of the tobacco produced.

6. *Methods of cultivation adopted. Is high or low or alluvial land preferred? Is irrigation practised? What is the kind of manure generally used? Is the seed sown broadcast on the fields or in seed beds? What are the seasons for sowing, transplanting, and cutting the crop? Are the stems cut down, or are the plants allowed to stand, the leaves being plucked singly? If the latter, is a second crop ever taken?*—Tobacco in this district is only cultivated on lands surrounding the villagers houses, which is all high. There is no alluvial land in Manbhoom, the whole district being an elevated laterite plain, averaging about 500 feet above the level of the sea, interspersed with ranges and isolated hills. The plants are watered for the first seven days, and where practicable the ground is once afterwards well saturated with water, after which no

further irrigation takes place. The water for this purpose is usually procured by letting it out of some adjacent tank or reservoir, but in many places it has to be raised from either of these sources or from a river, where one is close at hand. The manure used is goat's or sheep's-dung, and never cow-dung. Tobacco is not here sown broadcast, but in seed beds, from whence the seedlings are transplanted about a month after the seed has been sown. The plants being removed from the seed bed are then planted out in rows at a cubic a part from each other. The seed is sown in the month of Bhador and the first half of Assin and the transplanting takes place in the month of Assin and Kartick but the whole of the crop is not gathered in until the month of Magh though some of the larger and lower leaves are plucked as early as Pous. The stems are here not generally cut down, but the plant is allowed to stand, the leaves being plucked as they arrive at maturity. This goes on until nothing is left but the bare stalk with the flowers on it, which appear in the month of Magh. After the seed is gathered in, the old stems are cut down. In some villages, however, the plants are cut down with the leaves on them, when young shoots spring up from the stump that is left, from which a second crop is gathered.

7. *Method of curing adopted.*—After the leaves are cut or gathered they are then exposed to the sun's rays and so dried that the whole when so required, can be easily reduced to a powder. This method is commonly adopted when the tobacco is merely intended to be kept for home consumption. When the tobacco is intended for sale the leaves are pressed so as to make them adhere to each other, and after exposure to the heat of the sun they are made into bundles, in which shape the tobacco is taken to the market.

8. *Quantity of tobacco exported; shape in which exported, raw or manufactured; and value of exports.*—It has not been found possible to arrive at any proximate estimate of the quantity of tobacco exported but it must be small, as tobacco is imported in considerable quantities from Bankoora and Raneegunge in the Burdwan district. That which is exported is sent to the neighbouring districts in the raw state, whilst that imported is also principally raw tobacco. The value of that exported does not, I believe, exceed Rs. 2,000.

9. *Results of notable experiments made with exotic seed.*—About two years ago some Virginia tobacco seed, received from Government, was distributed to the cultivators in several parts of the district, the produce from which was very superior to that produced from the common kind of seed. The plants grew to three feet in height and upwards, with large and thickly-set leaves, so much so that the yield of tobacco from these plants was not less than double that which is obtained from the ordinary plants. The tobacco produced from this seed was also stronger and more pungent than that of the common kind, and was free from the fetid, bad smell that comes from the ordinary country tobacco. The cultivation of this species of tobacco is gradually spreading in some parts of the district, and will probably, in course of time, supersede the common country kind.

No. 1071, dated Purulia, the 22nd May 1874.

From—COLONEL E. A. ROWLATT, Deputy Commissioner of Manbhoom,  
To—The Commissioner of Chota Nagpore.

With reference to circular No. 14, from the Assistant Secretary to the Government of Bengal to the address of all Commissioners and district officers on the production of tobacco, I have the honor to state that this district is never, in my opinion, likely to become one in which tobacco will be grown to a large extent. The soil is not, I believe, well suited to the plant, and what good land there is will, I believe, be required year after year more for growth of food, as the population presses on the culturable area. I therefore do not think it would be advisable for the Government to go to expense in trying to improve the quality or curing of the better tobacco likely to be grown here. It could be far better if measures were taken to improve the culture of food-grains and the introduction of food-crops not now known to the people.

No. 1403, dated Purulia, the 24th June 1874.

From—COLONEL E. A. ROWLATT, Deputy Commissioner of Manbhoom,  
To—The Commissioner of Chota Nagpore.

With reference to your memorandum No. 1603 of the 30th ultimo, I have the honor to submit the following report on the experiment to introduce the cultivation of Virginia tobacco into this district. The seed was received by me in July 1872, and distributed to the pergunnahs named in the margin, and crops were grown in those pergunnahs during the following cold weather. I saw myself what was growing in Patkum, which was very fine-looking tobacco and far superior to the common growths, both in the quality and size of the leaves. From the reports subsequently received it appears that tobacco grown from this seed is highly prized by the people and much preferred to the common country sort. Seed was, it appears, distributed in 1873, by those who grew the tobacco in 1872, to others, and the cultivation extended. The leaves of last season's crop are reported to have been from one to two cubits in length, and thicker in texture than the ordinary kind. The strength of this tobacco is also said to be greater than what has been hitherto grown, so that altogether the experiment has been successful, and there is but little doubt but that the cultivation of this kind of tobacco will extend, and in time may very probably supersede the growth of the common country kind.

Raipore.  
Manbhoom.  
Nagpore.  
Phulkusma.  
Sarrabhoom.  
Patkum.  
Baghmundih.  
Jheriah.









ಗ್ರಂಥಾಲಯ  
ಲಾಲ್‌ಭಾಗ್, ಬೆಂಗಳೂರು

ಲಾಲ್‌ಬಾಗ್, ಬೆಂಗಳೂರು - 560 004

ವ.ಸಂಖ್ಯೆ:.....

ಈ ಕೆಳಗೆ ಕಾಣಿಸಿರುವ ದಿನದಂದು ಅಥವಾ ಅದಕ್ಕೂ ಮುಂಚೆ ಈ ಪುಸ್ತಕವನ್ನು ಹಿಂದಿರುಗಿಸಬೇಕು. ಅಥವಾ ಮುಂಚಿತವಾಗಿ ನವೀಕರಿಸಬೇಕು. ಇಲ್ಲದಿದ್ದರೆ ಒಂದು ದಿನಕ್ಕೆ ರೂ.1.00 ದಂಡ ಕೊಡಬೇಕಾಗುತ್ತದೆ.

ದಿನಾಂಕ.....ಸಹಿ	ದಿನಾಂಕ.....ಸಹಿ	ದಿನಾಂಕ.....ಸಹಿ

ಮ.ತಿ.ನೋ..

ವ. ಸಂಖ್ಯೆ \_\_\_\_\_

೨೧

**ತೋಟಗಾರಿಕೆ ಇಲಾಖೆಯ  
ಗ್ರಂಥಾಲಯ**

**ಲಾಲ್‌ಬಾಗ್, ಬೆಂಗಳೂರು-560 004**

